The Builder.

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Memorial to the late H. A. Hunt, F.S.I.....Mr. F. E. E. Schenck, Sculptor.
Pit-Kerro, N.B., and War Memorial, Alloa.....Mr. R. S. Lorimer, A.R.S.A., Architect.
Design for St. Martin's Church, Worcester.....Mr. G. H. Fellowes Prynne, F.R.I.B.A., Architect.
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The Opening of Kingsway.

THE arrangements for the ceremonial opening of Kingsway by the King and Queen, on Wednesday last, were exceedingly well made, and everything passed off with the ease and precision which generally characterises royal ceremonies in this country, where we are fortunate in having a sovereign who, at such functions, is always punctual, businesslike, and courteous. A special feature on this occasion was the presence of the members of the Paris Municipal Council, who, as visitors, were allotted the front seats among the spectators. It may be questioned whether the arrangements were not in one sense a little too convenient for dramatic effect. A couple of temporary decorative gates had been placed across Kingsway, north of the marquee; but when the psychological moment for declaring the street open arrived, instead of a progress to open the gates, a movable pillar with a gilt ball on the top of it, and connected by an electric wire with the gates, was brought up to the King (who seemed much amused at this little bit of jugglery), and on turning a key in this the gates opened outside. This was ingenious, but it was rather an effect *manqué*; the opening of the gates was not a prominent event, and by many of the spectators could not be seen at all; and the provision of temporary gates merely for the purpose of being symbolically opened seems rather foolish. A Royal Procession to the entry of the street, with an announcement "I declare this street open," duly emphasised by the sound of trumpets, would have been a more natural and at the same time a more dignified and effective manner of signalling the situation.

The address read by Mr. Cornwall, which has been given more or less fully in all the daily papers, touched more particularly two points: the great importance at present of clearing insanitary areas, and the desire of the County Council that the architecture of the new streets should receive their earnest and careful consideration. As to the importance of the first point there can be no two opinions; and there can be no doubt that the London County Council have done and are doing much in this direction. A considerable portion of the centre of London is becoming completely altered and re-organised; new streets are being driven through congeries of slums or of streets which, once wholesome and even fashionable, have sunk from their first estate and become begrimed with the dirt, and even are redolent with the smell, of the refuse of many years. In the part of London directly connected with Kingsway it is difficult to know where one is, so much have the ancient landmarks disappeared. But it is slow work, nevertheless. It was mentioned in the address, and is shown in Mr. Gomme's admirable historical pamphlet, presented to the audience at the ceremonial, that the proposal for a new street on the line of Kingsway was laid before a Select Committee as early as 1836, and that it was one of the schemes discussed by the new Metropolitan Board of Works at its foundation in 1855. Yet it has taken all this time to get the necessary property acquired and the line of street laid. And how long have we been promised a new street through the region of Seven Dials, and a clearance of all that infected neighbourhood; one may use the word, for every one going up St. Andrews-street knows the smell of Seven Dials. What would Napoléon have said to a similar dilatory system in Paris? "There were a number of old buildings," he said to a visitor at St. Helena, "useless and in the way of all improvement; I blew them all away—pff!"—making the action of blowing a thing away. Despotism (of an enlightened kind) certainly has its advantages in the securing of public improvements.

The claim made in the address, that the Council are giving earnest care and consideration to the architecture of the new streets, is not quite so well founded. It is hardly correct even to say that Aldwych and Kingsway form the most extensive improvement since the construction of Regent-street in 1820. We should have said that the Holborn Viaduct merited that place. At all events the comparison is not a fortunate one, for Regent-street was really a great architectural scheme, not only a line of street improvement; it was carried out consistently from end to end on a dignified design, which we have now nearly succeeded

in destroying. Some of the architecture already erected on the line of Aldwych is no doubt superior to Nash's, but there is not the slightest evidence so far as to any settled attempt at a complete and consistent design either for that street or for Kingsway. In Mr. Gomme's pamphlet the visitors were duly reminded of the fact that the Council had, five years ago, inaugurated a competition among eight selected architects for the best design for street architecture with a view to the treatment of these two new streets; that Mr. Norman Shaw had undertaken to advise them in the selection, without any fee, being willing to place his services "at the disposal of a body engaged in the congenial occupation of beautifying the architecture of the City in which one dwells." All this reads beautifully, no doubt, but the account omits to say that the whole competition was a complete *fiasco*; that nothing came of it; that the Council paid 2,000*l.* of the ratepayers' money in competition fees to architects who, and whose designs, were never made use of in any way; and that this lamentable result came about through sheer commercial greed on the part of the less educated majority of the Council, who found, or thought they found, that it would be more difficult to let plots for building on if there were a demand made for keeping the façade subservient to a general design. Architectural dignity, in the avowed search for which 2,000*l.* had been paid, was abandoned for mere considerations of business. It was not in Mr. Gomme's function, as Secretary, to criticise his Council, but we have no doubt he knows this as well as we do; and in view of that bit of history it hardly does for the County Council to say too much about its anxiety for the higher architectural treatment of the two new streets.

In regard to another matter into which commercial considerations, affecting the ratepayers rather than the Council, have entered—we mean the question of the alignment of the north side of the Strand between St. Mary's and St. Clement Danes—we think the Council have vindicated their action in declining to modify the line of street as at first laid down. Mr. Gomme tabulates the four suggested schemes, those of Mr. Thornycroft, the "Strand Improvement Committee," the Institute of Architects, and the Council's own line, giving the value surrendered and the loss per annum incident to each scheme. Comparing these with the appearance of the street as existing, we are confirmed in our first opinion, that the improvement was not worth the cost it would entail, and that in fact Mr. Thornycroft's scheme, which was apparently suggested by other than merely architectural considerations, would even have had a bad effect, as leaving a waste of open street much wider than was required for purposes of traffic.

One of the most satisfactory illustrations shown in connexion with Kingsway is the section of the street as arranged by the Council's engineer, showing the tramway subway with its landing platform in the centre, and the large arched tunnels on each side of it constructed as subways for pipes, with the main sewers formed beneath these. That is the way to construct a street, so as to leave pipes easily accessible and with plenty of room to arrange them; it is a first beginning, and it is to be hoped that it is established as a precedent to be followed in all new streets for the future.

We must, finally, congratulate the Clerk to the Council on the admirable and finely illustrated pamphlet which he has produced in regard to the history and statistics of the site and the streets; a history which, *inter alia*, explains and justifies the names, so happily found, of Kingsway and Aldwych. The County Council are fortunate in having in Mr. Gomme a Clerk who is both a man of business and an accomplished archæologist.

TRADES UNIONS AND THE LAW.

AT the Miners' Federation held at Blackpool recently, one of the principal resolutions was that the Federation should "continue to press forward the Trades Unions and Trades Disputes Bill, making trades unions' funds secure, and placing them again in the position the Federation understood them to be in under the 1871 and 1876 Trades Union Acts." We have frequently pointed out the very salutary effect that the recent decisions have had on labour disputes, and the benefit that has ensued to employers, employees, and the trade of the country generally since trades union leaders have had to realise that illegal action on their part is followed by the consequences imposed on every other public body or individual in the State—pecuniary responsibility. Nevertheless, amongst the majority of the speakers there seemed to be a grave misapprehension on what the law really is.

In the first place, it is popularly assumed that the present liability of the trades unions has been imposed by the decision of the legal members of the House of Lords and not by the Legislature, and that their legal position has been differentiated from their statutory status under the Trades Unions Acts of 1871 and 1876. It is hardly necessary to state that a study of the statutes will show such an opinion to be entirely erroneous. The trades unions by the Act of 1871 were protected from a principle of the common law that they were unlawful merely because their purposes might be deemed in restraint of trade. The words of sections 1 and 2 are:—

"The purposes of any trade union shall not by reason merely that they are in restraint of trade be deemed to be unlawful so as to render any member of such trade union liable to criminal prosecution for conspiracy or otherwise, or so as to render void or voidable any agreement or trust."

The definition of a trade union in section 16 of the Act of 1876 is as follows:—

"Any combination, whether temporary or permanent, for regulating the relations between workmen and masters, or between workmen and workmen, or between masters and masters, or for imposing restrictive conditions on the conduct of any trade or business, whether such combination would or would not, if the principal Act had not been passed, have been deemed to have been an unlawful combination *by reason of some one or more of its purposes being in restraint of trade.*"

It only remains to observe that the Act of 1871 contained powers enabling the trades unions to sue and to be sued in respect to their property.

It is this legislation, directly conferring upon the trades unions a certain immunity from the law which prevented restraint of trade, which has been construed by the trades union leaders as a law permitting them to do illegal acts with complete impunity as far as pecuniary liability is concerned. Throughout the speeches at the Congress it was assumed that the employers were now more favoured by the law than the unions, and it was stated that "black lists" were circulated which prevented the men from obtaining employment anywhere. The unions, however, cannot be ignorant that the courts will hold the masters responsible for illegal combination or action equally with the unions, and the right course for the unions to adopt is to see that action is taken where damage has been suffered by such illegal action, and not to make it merely the ground of a party cry to obtain freedom from liability for their own funds in case of illegal action. If the Legislature is so much in the hands of the capitalists as the speakers at such meetings are fond of asserting, they may rest assured that in no case are they likely to obtain a one-sided immunity; but what is sauce for the goose would be made sauce for the gander, and such a course would tend to little less than anarchy.

What degree of coercion can be exercised by the unions in trade disputes is a question difficult of determination, and which has led to much litigation; from a recent decision in the House of Lords it would seem that an indiscriminate circulation of "black lists" which prevented a man obtaining employment would certainly be held illegal. It is not for us in these pages to attempt to lay down the law governing this subject, but we may quote what was said by Sir W. Erle when treating of trades unions:—"Every person has a right under the law as between himself and his fellow subjects to full freedom in disposing of his own labour or his own capital according to his will. It follows that every other person is subject to the correlative duty arising therefrom, and is prohibited from any obstruction to the fullest exercise of this right which can be made compatible with the exercise of similar rights by others." These words have recently received approval in the House of Lords, and a study of such cases as Allen *v.* Flood shows with what careful impartiality the law is administered. It is of primary importance that the trades union leaders should disabuse themselves of the idea that the Trades Union Acts legalised all forms of actionable interference with the rights of others, or that the recent decisions have in any way derogated from the privileges conferred by these Acts.

ARCHITECTURAL ASSOCIATION DAY SCHOOL PRIZE WINNERS.—In the list of the Architectural Association prize winners, published last week, an error occurs in regard to the name of the winner of the prize for "the best work in the studio during the whole of the session" (first year). As given in our issue the name is printed as "S. R. Adams." It should be Maurice S. R. Adams.

CARNEGIE LIBRARY, SOWERBY BRIDGE.—The new public library and reading-room at Sowerby Bridge was formally opened on Saturday last week. The library and reading-room have been erected under the supervision of the surveyor and engineer, Mr. A. S. Whitehead.

NOTES.

Winchester Cathedral.

WE regret to learn that the serious statements made in the daily papers as to the further defects discovered in Winchester Cathedral—statements which we generally receive with a certain scepticism, or at all events with caution—are substantially correct. The principal subsidence and defect exists in the three bays of De Lucy's work (*circa* 1200) forming the south-east corner of the presbytery, extending from the later work of the south chancel aisle to the Lady Chapel, and including Bishop Langton's chapel. The further excavations that have been made reveal here a very serious dislocation of the wall and foundations, the footings of the buttresses having gone, leaving the buttresses hanging on instead of supporting the wall. The groining of the three bays adjacent to the defective wall is found to be seriously cracked, the line of the ribs in some instances assuming a convex instead of a concave curve, and the masonry of the vaulting surfaces has lost all true bond, or possibly (as in the case of some of the Peterborough masonry) never had any. The statement of a local paper that the walls appear to be very much like a shell—an outer wall and an inner wall between which rubble has been poured in, we have no doubt is quite correct; exactly the same state of things was found, it may be remembered, in the case of the crossing piers at Peterborough. A meeting of the Chapter and of some eminent laymen is about to be called by the Dean to consider the matter. The Dean and Chapter are acting under the advice of Mr. T. G. Jackson as consulting architect, and Mr. J. B. Colson, the official architect to the fabric.

The New Vyrnwy Aqueduct.

NOTHING like finality is to be expected in waterworks construction for the supply of the rapidly growing cities of the world. On every hand we hear of the acquisition of new catchment areas, and the execution of extensive works for the collection and storage of drinking water. Some great centres of population, such as Glasgow, Manchester, Liverpool, and Birmingham, have succeeded in securing gathering grounds that will yield abundant supplies for many years to come. But even these favoured cities are compelled to spend huge sums from time to time for the purpose of bringing in the increased quantities of water demanded by the growth of their respective populations. Liverpool furnishes the most recent example of the kind by the completion of the second aqueduct from Lake Vyrnwy at a cost of nearly 785,000*l*. The inadequate supplies from the Rivington reservoirs during the past summer show that the Water Committee were wise in undertaking the construction of this second conduit some three years ago, and its successful completion has placed an additional daily supply of from 14,000,000 to 15,000,000 gallons at the disposal of the inhabitants. Although no great difficulties have presented themselves in this case, the laying of a 42-in. pipe line 67½ miles long necessarily provides ample opportunity for the exercise of engineering skill and administrative ability. Various rivers, canals, railways, and bogs have had to be crossed, and finally the pipe enters Liverpool from beneath the Mersey. The engineer, Mr. J. Parry, is to be congratulated upon the completion of the undertaking in the short period of three years, and also upon the somewhat unusual fact that the actual cost has been less than the estimated expenditure.

The National Physical Laboratory.

WE had an opportunity last Saturday of inspecting the National Physical Laboratory at Bushy House, Teddington. Considerable additions have recently been made to the plant and apparatus, and many of the departments are now in thorough working order, carrying out researches the results of which are of great importance both to engineers and to physicists. Dr. Stanton has perfected an ingenious testing machine which subjects material to rapid repetitions of stress first in one direction and then in the other. When his researches are completed we shall know whether metallic "fatigue" has any importance or not. Many engineers have attributed the fracture of shafts to metallic fatigue, and it will be of importance to know whether it is due to this cause or to resonance, or probably to a combination of both. Mr. Paterson has perfected the methods of measuring the candle power of lamps, and has reduced commercial photometry to an exact science. Researches are being made for radio-activity in minerals, and the effects of extreme cold on the properties of matter are also being investigated. The metallurgy department, under Dr. Carpenter, has done excellent work in photographing through a microscope the surface of steel at the temperature of solidification. Very elaborate apparatus in metrology has been set up, and the screw measuring and dividing engines perform their functions admirably. The tide-predicting machine which is founded on Lord Kelvin's design is a marvellous example of the application of pure science to practice, enabling the tides at the various ports in India to be predicted several years in advance. In the electrical department Mr. Campbell has perfected his apparatus for making researches in iron, and has also perfected the methods of measuring inductance and capacity. New buildings are now in course of erection for the electrotechnical department, and we hope that a special room will be built for the accurate photometry of arc lamps by Professor Blondel's method.

Concrete-Steel Groynes.

EXPERIENCE has proved in a very conclusive manner that long groynes, of small height but capable of being raised as required, are most successful for the accumulation of drifting material and the building up of foreshores so as to form natural defences for threatened lands. One trouble is that the timber groynes adopted hitherto have suffered from drawbacks which have militated against the application of the system. Among the drawbacks in question are the liability to decay and to destruction by the teredo, the difficulty of rapid construction both on the dry shore and beyond low water mark, and the trouble involved by additions at the top after beach material has accumulated and by adjustment at the bottom in the case of "under-runs." The Owens-Case reinforced concrete groynes constitute a considerable improvement on timber construction. They are impervious to the attack of worms, do not decay, and by their weight are far less liable to displacement. This ingenious type of groyne consists of piles with an I section into the grooves of which slabs of concrete-steel are loosely fitted. The slabs adjust themselves to under-runs, and by using piles of suitable length provision can be made for the addition of further slabs to increase the height of the groyne as required. Concrete-steel is likely to be largely used for sea-coast protection works, and we are glad to find that civil engineers are beginning to recognise its advantages.

Electric Power Distribution.

THE opening of the Lancashire Electric Power Company's supply station last week is a notable event, as it is the first company in this country to supply power by means of overhead wires at a pressure of 10,000 volts. One of the groups of wires leaving the power station is carried by means of overhead wires a distance of one mile, and then by underground cables for another twelve miles. Another group of wires is carried on poles for four miles, it will then go underground for six miles, and finally be overhead again for five and a half miles. Presumably the Board of Trade have given their sanction, and there will probably soon be many more systems of overhead wires at even higher pressures. In California there are several such systems, but the lengths run to hundreds of miles, and the pressures to 60,000 volts. Under no possible circumstances can overhead wires be beautiful, but one incidental advantage accruing from electric supply is the abolition of factory chimneys. The Acme Spinning Mill is the first mill in Lancashire which has no chimney. The 1,240 horse-power required to drive its spindles is supplied by this new company, and the use of this method of driving has revolutionised the appearance of spinning factories. The electric motors are fixed to the ceiling, and, as the driving is "direct," there are no belts. Hence, not only is the floor space economised, but the lighting of the workrooms is considerably improved. The capital cost of installing the spindles is about ten per cent. cheaper than when steam is used, and thus a considerable economy is effected. From many points of view the electric driving of workshops is desirable, and so electric power companies should not be hampered by unnecessary restrictions. It seems to us, however, that for distances of a few miles the extra cost of underground mains would not seriously hamper a supply undertaking. There would certainly be less liability to a breakdown, less cost for maintenance, and much greater safety for large birds.

Ancient Lights.

THE decision of the Vacation Court in the case of Barff and others *v.* Mann, Crossman, & Paulin, Ltd. (*Builder* reports, p. 403) is worthy of note. The plaintiffs were applying for an interim injunction restraining the defendants from obstructing the light to a block of buildings known as Nos. 145 to 160, Blayton's-buildings, in Hoxton, to be used as artisans' dwellings in self-contained flats. It appeared that the block as to certain windows had been erected from dates beginning as early as June 1, 1885, whilst the windows to other floors had been completed at various subsequent dates, and that the whole carcase was roofed in and boarded by September 21, 1885. The writ in the action was issued September 8. The defendants contended that no action could be brought until twenty years had expired from the time the building was properly roofed in. The court supported this contention, and the action was dismissed without prejudice to the plaintiffs' right to commence a fresh action. The Prescription Act, 1832, in sect. 3 enacts that "when the access and use of light to and for any dwelling-house, workshop, or other building shall have been actually enjoyed for the full period of twenty years without interruption the right thereto shall be deemed absolute and indefeasible. . . ." Sect. 4 provides that the "period" is to be the term next before action brought, but it also provides that nothing is to be deemed an interruption unless it has been acquiesced in or submitted to for one year, and it has therefore been contended that a period of something over nineteen years confers the right to light. It was, however, held in the year 1895 that even if the right could not be interrupted after the expiration of something over nineteen years, the action cannot be brought before the expiration of the full period of twenty years. As regards the second point, it has also been decided—practically since the year 1869—that although the dwelling-house need not be occupied or fit for occupation, yet the building must practically be structurally complete outside for the right to light to attach.

The Hall-road Collision.

AFTER considering the evidence relative to the serious accident that occurred in July last on the Lancashire and Yorkshire Railway near Liverpool, Colonel Druitt came to the only possible conclusion, that inadvertence and neglect of regulations were the sole causes. The moral is the very familiar one that punctuality and speed are less important than safety. It does not appear that the points were at fault, that the corridor type of carriage used is more liable to be telescoped than the ordinary carriage with separate compartments, or that the risk of fire is greater with electric than with steam traction. While admitting the substantial correctness of the two latter points, we must emphasise the contention that telescoping and fire are extremely undesirable occurrences against which it is the duty of railway companies to make more adequate provision by the adoption of steel carriages with non-flammable fittings and upholstery. The carriage based on the mail coach of the Georgian epoch has not yet died the natural death which ought to have taken place a generation or two back. It still lives to witness better vehicles, but even these are not worthy of the twentieth century, in the respect that they are ready to crumple up and to burst into flame on the last provocation. Except where competition compels or the Board of Trade insists, railway people seem to live twenty-five years behind the times.

Cavalry Barracks.

THE Secretary for War recently congratulated the people of Norwich on having gratuitously provided a site for cavalry barracks in that town. Not to be outdone in this form of patriotism, subscriptions are now being received at Chester in order that this town may likewise present the Army Council with a site. The subject is naturally causing criticism. We have nothing here to say on the general question as to whether this town or that should be a cavalry centre. But it is obvious that a site for barracks requires care and forethought in its selection, and should not be left to a number of amateurs. It is important that it should be in a healthy and open situation, so that it can be thoroughly sanitary. Again, the present and future character and wants of the adjacent buildings must be considered. We may very fairly ask why sites for workhouses and other municipal institutions should not also be presented by towns. The truth is that localities in this matter are actuated not so much by patriotism as by various interested motives, such as the increase of trade to shops and public-houses, and various similar reasons. It is certain, however, putting these reasons on one side, that barrack sites should be selected by responsible and skilled officials of the Government and paid for at the proper value.

The Royal Strand Theatre.

THE site of the Strand Theatre will shortly be cleared for the erection of a tube station by the Great Northern, Piccadilly, and Brompton Railway Company. The house was originally used for the exhibition of panoramas painted by Reinagle and Thomas Barker; in 1831 it was converted into a theatre for Rayner the comedian and Mrs. Waylett the singer, and Douglas Jerrold's early plays were brought out there. In those days the great patent houses enjoyed close monopolies which were jealously protected, and Rayner, whilst defying the Lord Chamberlain, adopted the expedient of conducting the house as a "subscription theatre," no tickets being sold at the door. Some forty years ago the theatre became one of the most popular in London with the performance of burlesques written by H. J. Byron and by Sir Francis Burnand, in which William Farren, Rogers, Clark, Honey, Miss Ada Swanborough, and Miss Marie Wilton (Lady Bancroft) played a principal part. After a fire on October 21, 1866, the house was reconstructed from plans and designs by C. J. Phipps, and the front has since been remodelled for the widening of the Strand. The property, which covers an area of 7,523 ft. superficial, was offered for sale in November, 1892, and withdrawn after a bid of 41,000*l.*, the ground-rent being 1,850*l.* per annum for a then unexpired term of twenty-two years.

Lord Nelson's Homes in London and Merton.

NELSON will be much in our minds to-day. An acclaim of welcome from his own ship in Portsmouth Harbour recently greeted the French Squadron, whose officers, with the graceful chivalry of their race, saluted his statue in Trafalgar-square. So exalted and single-hearted was the ruling principle of his life that it seems to preclude all minor considerations, and yet our readers may care to be reminded of the two or three places which are associated with Nelson's sojourn in and near London. In August, 1805, he quitted his lodgings in Craven-street, Strand, for Merton Place, on the Wandle, in Surrey, which he had bought a few years previously from a Mr. William Axe. Lady Hamilton arranged the grounds and the interior of the house for him. He writes in his private diary for September 13:—

"At half-past 10 drove from dear, dear Merton, where I left all which I hold dear in this world, to go to serve my King and my country."

He planted, it is said, the mulberry-tree in the garden of a double cottage in Pincott-road, Merton, which he built for his coachman and gardener. The stables and entrance-lodge stood near the present "Nelson Arms" public-house. A row of houses, Nelson-place, marks the site of the house, to the west of Abbey House. The grounds, sold by Lady Hamilton's trustees, and since known as Nelson's Fields, were divided into numerous small holdings. Lord and Lady Nelson were living at No. 141, now No. 147, New Bond-street, in 1797, when the mob, celebrating Lord Duncan's victory at Camperdown, demanded that the house should be illuminated. On being told that Admiral Nelson lay there severely wounded and suffering great pain, the ringleader replied:—"You shall hear no more from us to-night." Haslewood (his executor) relates that the rupture with Lady Nelson occurred in the house in Arlington-street where they lodged during the winter of 1800-1. At that time the Hamiltons were living at No. 23, Piccadilly, and there was born Horatia, Mrs. Ward, who died in 1881. In the waiting-room of the (old) Colonial Office, in Downing-street, Nelson and Wellington met, on the only occasion in their lives.

The Chapel of St. Michael and St. George.

THE Chapel of the Order of St. Michael and St. George, at St. Paul's Cathedral, is that in which Stevens's Wellington monument was long half buried, with the light at the back of it. Some notice of it has recently appeared in the daily papers, following on a semi-private inspection for members the other day. It is still, however, in a very unfinished state, but there is some good work getting done there under the direction and from the designs of Mr. Somers Clarke; sufficient to show that when completed it will be a very rich and beautiful chapel of its kind. The semi-circle of stalls round the east apse is now completed; the stalls are carved in teak by Mr. J. E. Knox, and show very good work, in keeping with the classic character of the cathedral, but never-

theless with a certain modernity of style, and not a mere reproduction of ornament of the Wren period. An effective incident in these stalls is the insertion of some square panels of old decorative iron-work, belonging to the cathedral and formerly in the choir, as perforated panels in the fronts of the desks. The work is flat in character and very refined in design, and suits its present position very well. The window has been designed by Mr. Clarke altogether in white glass so far as at present seen; if it is intended to introduce some colour into the coat-of-arms portion, now covered up, that would be a good addition to the window and an appropriate employment of colour. The vaults are being treated with gilding, and four octagonal panels in the centre of the ceiling are to be filled with plaster panels containing coats-of-arms surrounded by very fine and bold mantling, which will have a good decorative effect when in position. The altar and a good many other things are still wanting, but we hope to see before long the completion of the whole, which will form an important addition to the interior beauties of St. Paul's.

Institute of Oil Painters.

THE present exhibition is one of the best which the Institute has had for some years past, and they have certainly been fortunate in their last choice of a President, Mr. Frank Walton, whose principal work (325), an evening landscape with no title but a line of poetry, is itself quite a poem in feeling, besides showing admirable execution; his two other small landscapes (326, 328) are also very good. There are not many figure pictures of importance; Mr. Robert Fowler's life-size "Pandora" (10) is a good sculpturesque figure in the conventional colour which this artist usually employs in nude figures; Mr. John White's "Kilmeny" (203) is an original and effective illustration of a now little read poem; Mr. Frampton's "Annunciation" (110) is that kind of sham early Renaissance picture of which Mr. Spencer Stanhope set a fashion; Mr. Kennington's "Instruction" (209) is pretty and his "Morgiana" (271) brilliant, but they hardly claim higher epithets; and Mr. Stock's large and seriously intended picture, "The Uplifting of Psyche" (308) hardly realises its aim. A small highly finished figure by Mrs. Murray-Cookesley, however, called "Flight" (115), representing a woman of some uncertain antique period, standing in a doorway clad in a sumptuous costume, deserves attention for its exceptionally careful painting. But in the main the landscapes are the strong point of the exhibition, and there are a good many fine ones: Mr. Van der Weyden's "In the Shadow of the Ramparts" (42), Mr. Herbert Marshall's "Whitehall" (53), with a fine London sky effect; Mr. Wetherbee's beautifully composed work "The Pool" (70)—a kind of Salvator Rosa on a small scale, only better; Mr. Robert Little's "Caerlaverock Castle" (107) and "Glencople" (66); Mr. W. H. Bartlett's "Nearing Home" (127), one of his Irish coast pictures; Mr. H. Hughes-Stanton's "Twilight" (140); Mr. Reid's "Steady, Johnny" (157), including good figures, but essentially a "marine"; Mr. Hill's "On the Sand Dunes" (298); Mr. Montague Smyth's fine picturesque mass of old building, "The Old Sluice Gate, Wisbech" (161); Mr. Leslie Thomson's "Anglesea Coast" (249); and Mr. Aumonier's "Summer" (266) one of the best pictures we have seen of his, and filled with a real summer glow; too often nowadays we see landscapes labelled "Summer" which have not a ray of sunshine in them. We presume we should be expected to mention Mr. Parton's large picture, "In the Meadows of Normandy" (180), which is what we should call a vignette on a large scale. There are a good many small landscapes, among the unpretending works hung near the skirting, which will be found worth looking for and looking at, though we have not space to mention their names here.

The New English Art Club.

LIKE some other exhibitions, the new English Art Club has taken refuge in the room of the Alpine Club, where the light is indeed excellent, but the access bad and inconvenient and the aspect of the room depressing. We have endeavoured to find out why it is that some pictures in this exhibition which are undeniably clever, nevertheless entirely fail to attract one—indeed have rather the opposite effect; for instance, Mr. Tonks's "Portrait" (31) of a man sitting on a sofa, with a little wooden doll of child by him playing with cards; the child is treated merely as a kind of "property" thrown in; the figure of the man is well drawn and composed and there is character in it; yet is it one of the most uninviting of portraits. The reason perhaps lies in the entire absence of charm, either of colour or expression; for charm seems to be the quality that the typical New English artist carefully eschews as a temptation of the Evil one, though he does not always produce such wanton hideousness as in Mr. John's "Mother and Child" (3). Mr. Rothenstein's "An Exposition of the Law" (21) is a grave work painted in a serious spirit; but there again is that same heavy and dull effect resulting from the apparently deliberate rejection of life and brightness. The most forcible "New English" painter is an Italian, Signor Mancini, whose out-door "Portrait" (25) of an old man set off by some brilliantly painted accessories, shows what pictorial quality in a work of this kind really is, and is a peril to some of the English members, whose dull and loaded works it fairly kills. Mr. Orpen's nude study of "A Spanish Woman" (26), her face hid by the mass of her hair, is a really powerful piece of figure drawing; his "Lottie of Paradise Row" (74), a half-length of a flower-girl, is clever, certainly, but again has no pictorial quality. Mr. Muirhead's "Woodland Landscape" (78) is a fine picture—there is light and air there at any rate; so there is in Professor Brown's "The Road by the Cliff" (13). Mr. Mark Fisher's bright and powerful landscape, "The Manor Farm" (30), hardly seems in place among its surroundings; his other work "A Sheep-fold, November" (76) partakes the general heaviness of the atmosphere. The late Mr. Tomson's "The Coming Storm" (44) is a powerful but rather overdone effect—the clouds too solid!; and Mr. Sydney Lee's "The Ruined Church" (5), seen by limelight—we beg pardon, moonlight—is too like a stage effect. Among curiosities of the collection are a badly drawn "Cupid and Nymphs" (96); "Morning" (86) represented by a young lady with a very long body and very short (or very badly fore-shortened) legs, sitting on the edge of her bed; a portrait of a lady with a doll's head (18); two French landscapes (34, 55) which look as if they came out of a doll's house; "High Street, Oxford" (101), with all the buildings crooked; Mr. Brabazon's shapeless blots of colour which it is the fashion to accept for sketches of architecture; and the scrawls of town scenes (64, 67)—for they can hardly claim the title of sketches—exhibited by a prominent and very outspoken art critic. There is no reason why a man should not be a good art critic without being able to paint himself; but he would be wiser in that case not to exhibit his own works; they are not calculated to add to the weight of his criticism.

The Dutch Gallery.

AT the Dutch Gallery, 39, Old Bond-street, there is on view a collection of drawings and paintings by Professor Legros, and drawings by Miss Dorothea Landau. Professor Legros' works consist to a considerable extent of drawings with a monochrome wash effect, in a style which he has often used, and which permits of the rapid realisation of an idea in landscape composition and figure character. "Le Liseur" (13) is a typical example; a landscape composition framed between two clusters of tree trunks, at the foot of one of which is a figure reading. Among the separate figures that of "L'Incendiaire," showing a man stealing away in fear and haste from the scene of his crime, has a power that reminds one of Blake. "Le Petit Abandonné" (7) is a pathetic head of a boy. "L'Orage" (15) is a fine sketch in oils; "Paysage" a slightly washed landscape sketch reminding one of the "Liber Veritatis," only in a different spirit from Claude. There are 41 works of different kinds, all of them more or less original and effective. Miss Landau's drawings of drapery, figures, and portrait heads, are good and capable work, and the frame of "Various ideas for Pictures" (65) is interesting, and contains sketches of figure groups that would be worth working out into finished compositions.

FALCON-SQUARE CHAPEL, E.C.—The Board of Charity Commissioners have formulated a scheme for the regulation of the Charity, which consists of the Falcon-square Congregational Chapel and trust property in the parish of St. Olave, Silver-street, E.C. The chief changes introduced by the scheme relate to the disposal of the site of the chapel and the adjoining warehouse, and the application of the rent and net proceeds towards the erection—at a maximum outlay of 16,000*l.*—of a church at Harrow, to be called the Silver-street Congregational Church, with schools and a manse, and towards an endowment for the purposes of Congregational extension in London. The chapel site covers over 5,532 ft. super., having a frontage to Falcon-square and extending to Windsor-court in the rear. It is to be let by auction upon a ninety-nine years' building lease with an option of the purchase of the freehold. It is said that the chapel, one of the oldest within the limits of the City, was originally founded by some Nonconformist friends of Milton.

THE INSTITUTE OF ARCHITECTS AT NEWCASTLE-ON-TYNE.

THE visit of the Royal Institute of British Architects to Newcastle terminated on Saturday last, and it is satisfactory to record that the proceedings were in every way successful. The open-minded spirit displayed by the Institute in holding the annual dinner in other centres than the metropolis cannot be too highly commended. Such a policy must surely tend to strengthen the relationship between the parent body and the allied societies. At the same time the members of the Northern Architectural Association are to be congratulated on the realisation of an event which they had hoped for last year, and which had to be unavoidably postponed. Thanks to the energy of their Hon. Secretary (Mr. A. B. Plummer), arrangements were made to show the members of the Institute as much of Newcastle and the neighbourhood as time would allow. The President journeyed down from London with a goodly party of members on the afternoon of the 12th inst., and arrived in time to attend a reception given in honour of the Institute by the Mayor and Mayoress of Newcastle in the Grand Assembly Rooms. A large and distinguished company of ladies and gentlemen attended, the number present being about four hundred.

On Friday morning some impression of Newcastle from an architectural point of view was obtained by the members on their hurried walk to the Fish Quay, as the programme provided for an early start at 9.30, and time was limited, to view the buildings in the streets, to which we will return later. A steamer, placed at the Institute's disposal by the River Tyne Commissioners, was boarded by a large party, augmented by members who had arrived from Edinburgh, Glasgow, Leeds, and other centres. The starting point was beneath the shadow of the high-level bridge, that mighty structure of Stevenson's genius, for which one's admiration is increased after a close inspection of its detail and construction viewed from below. The tall, graceful piers rising from bases of massive masonry and terminated in a refined and appropriate manner, connected with lattice girders of exceedingly simple and direct construction, were most impressive. Indeed, the view of the whole surroundings, with its blackened pile of picturesque buildings rising up from the river on all sides, is one not likely to be forgotten. Adjoining are other vast engineering feats; for example, the swing bridge and the new railway bridge now in course of construction. Apparently little attempt is being made in this instance to combine utility with artistic effect. After proceeding up the river beyond the Elswick Works, the steamer returned and continued the journey down the river to Grangemouth. The earlier part of the voyage was favoured with bright sunshine, but the wind was exceedingly cold; nevertheless the majority of the party remained on deck and manifested the greatest interest in the many works on the banks. The whole Tyneside would appear to be a vast workshop, and all kinds of up-to-date appliances for building and loading ships seem to be used. Several of the shipbuilding yards have peculiar overhead erections to facilitate the handling and placing in position of heavy iron plates. Passing Yarrow a distant view was obtained of the ancient church associated with the memory of Bede the Venerable, who was buried here in A.D. 735. A landing was effected at the north pier at Tynemouth, and the party had the experience of witnessing a heavy sea rolling in and occasional clouds of spray dashing over the structure. The authorities had provided a covered-in truck to prevent the visitors getting a wetting, which conveyed the party up into the "Haven." The old Priory buildings were inspected with close interest, but, as time was rather limited, the shelter of the Lady Chapel was sought, where Canon Hicks, vicar of Tynemouth Priory, gave a short history of the edifice, and Mr. W. H. Knowles explained by means of a plan the existence of a Norman church on the site of the present Priory building erected in the XIIth century. Foundations of the former church have recently been exposed, and could easily be traced. The eastern part of the choir, with its beautiful lancet and elliptical windows, is the principal fragment that remains of what at one time must have been a very stately pile. Unfortunately, the latter part of the excursion was attended by a heavy fall of hail, but much appreciation was expressed with the morning arrangements. The party returned to Newcastle by electric train.

At the invitation of the Northern Architectural Association, the visitors had luncheon in the Grand Assembly Rooms. Mr. James T. Cackett, President, was in the chair. In the afternoon the members visited several of the historic buildings in the city under the guidance of Mr. A. B. Plummer and Mr. R. O. Heslop. The cathedral was first on the list, with its graceful open-work tower, which must be familiar to all travellers passing through Newcastle. Before entering the cathedral the memorial to the late Queen Victoria, by Mr. Alfred Gilbert, claimed attention for a few minutes; a monument replete with beautiful modelling and subtle detail; its daring originality cannot but arrest attention. In the interior of the cathedral we have another example of the handiwork of a modern designer of rare genius. The rood screen, pulpit, and choir stalls, the work of the late R. J. Johnson, were examined with great interest. The consistency of the whole scheme, beautifully designed and carved, was remarked upon by many present. It was stated that the carvings were entirely executed in Newcastle, and are the work of Mr. Ralph Hedley. Another beautiful piece of local craftsmanship was a silver cross exhibited in the sacristy by the verger. Many interesting points about the structure of the interior of the cathedral were pointed out, notably the existence of an early capital and column incased in the great piers of the transept, and the evidence of the nave arches having been raised, at a later date than the building of the church, by the cutting away of the original masonry. A rare font of Purbeck marble, surmounted by a beautifully-carved canopy, also claimed attention. Surprise was expressed that Purbeck marble could be obtained in such large blocks. On leaving the cathedral, the visitors proceeded to the old castle, and were conducted to the battlements and to the lowest apartments, and eventually into the library of the Society of Antiquaries, where a brief history of the castle was given. Mr. Parker Brewis, one of the members of the Society, also gave an interesting description of some of the historic relics in this chamber. The castle was originally protected by a double wall and deep ditches, and the entrance was under a gatehouse, which still exists within a stone's-throw on the town side of the keep. Some members of the party were conducted over this latter building by Mr. Brewis; here are collected numerous Roman remains found in the locality. At the Guildhall the beautiful carvings above the mantelpiece in the Merchants' Court were much admired, also the paintings in the Mayor's parlour. Trinity House was next visited, and the small chapel, with its finely-carved pews, then, finally, All Saints' Church, with its curious Flemish brass on the wall.

Ultimately the party adjourned to the new rooms of the Northern Architectural Association, where tea was partaken of. After a short address by Mr. J. T. Cackett, Mr. John Belcher, in a graceful speech, formally declared the building open.

The Northern Architectural Association is in a very flourishing condition. It consists of seventy-eight members, seventy-two associates, and seventy students, and has been established since 1858.

The President explained that they had recently acquired the freehold, thanks to the generosity of their late President (Mr. William Glover), who had given, roughly speaking, about 970*l.* towards that object. Mr. Glover had also presented them with 500*l.*, the interest of which was to be devoted to educational purposes. After tea, the Laing Art Gallery was inspected, a new building, erected at the cost of 20,000*l.*, from designs by Mr. J. T. Cackett and Mr. R. Burns Dick. It is unfortunate that the principal front of this dignified building faces a side street, but no doubt the architects had to make the most of the limited site at their disposal. The façade is well balanced, and the effect of the blank wall over the rich doorway is highly pleasing.

Returning to a general consideration of the architecture of Newcastle, the visitor cannot but be favourably impressed with the aspect of the city viewed from its leading thoroughfares. Starting from the open space in front of the handsome station entrance and proceeding up Grainger-street, almost entirely built of stone, many important buildings can be noted. Close at hand is Grey-street, descending in a long, graceful curve in the direction of the river, famed for the noble architectural character of its buildings. Perhaps the most pleasing view of this street is seen by looking up from the lower end and catching a glimpse of the theatre portico and the tall Corinthian column erected in memory of Earl Grey. The horizontal character of the buildings in this street, combined with the broad and simple lines of the classic treatment, is truly inspiring. The street was carried out as a speculation of one Richard Grainger, in the early part of last century, from the designs of four architects—Benjamin Green, John Dobson, John Wardle, and John Walker; it seems probable that, of these, Dobson was the largest contributor. The additions to this street of late years cannot be said to harmonise with its refined architecture—one building particularly seems quite out of sight—neither can one admire the fussy appendage under the portico of the Theatre Royal.

It is a pleasure to find in Newcastle some really good architecture of modern date—for instance, the two banks designed by the late R. J. Johnson; they are buildings of distinction, and, while displaying no features of striking originality, they bear evidence of the master hand. On the whole, the façade of Messrs. Lloyd's bank is perhaps the more pleasing of the two.

At 7.30 the annual dinner took place, and was attended by upwards of 130 members and guests, Mr. John Belcher, A.R.A., in the chair. A report of the dinner and the speeches is given separately.

The programme for Saturday comprised a visit to Durham and Hexham Cathedrals, but, as the majority of the party elected to go to the former cathedral, the excursion to Hexham was abandoned.

The morning turned out dull, and some disappointment was expressed at the absence of sunshine on arriving at Durham station, which no doubt would have added to the enchantment of the panoramic view of the cathedral and castle buildings seen from this point.

Mr. Hodgson Fowler, M.A., the architect of the diocese, conducted the members into the interior of the building, and gave an exhaustive account of the fabric, together with a short history of the foundation. Like many other of our old cathedrals, the building has suffered under the treatment of the so-called restorer. About the commencement of the present century, under the superintendence of Wyatt, the whole cathedral underwent a process of chiselling, and some 3 in. of the entire surface was removed in order to make it more uniform, and mouldings and projections were cut down and altered. Evidence of this was pointed out by Mr. Fowler before entering the building; the difference between the old and the new surface could be easily traced at the base of one of the western towers.

In his historical notice, Mr. Fowler said about the year 1000 A.D. Bishop Aldhune built a stone church, to which the body of St. Cuthbert was transferred from a kind of wooden building where it had been first placed, and ninety years later the early church was transformed and the foundation-stone laid by Bishop Carileph of what is partly the existing structure. During these operations the body of St. Cuthbert was laid in the [illegible] sisters of the monastery. Carilef built the choir and the first two arches of the nave and one of the triforium. The second Norman Bishop, Flambard, carried on the nave which he had laid out, and by the year 1145 A.D. the vault of the nave and the north and south doorways were completed. Then Bishop Pudsey about 1150 A.D. began to build a Lady chapel at the east end of the cathedral, which twice fell down during construction, owing, it is said, to the interposition of St. Cuthbert. The chapel was then transferred to the west end, where, under the name of the Galilee, it still exists.

The Chapel of the Nine Altars was next visited, and Mr. Fowler conducted the party on to a sort of raised platform at the back

of the High Altar; here a large slab marks the spot where the remains of St. Cuthbert are deposited. The tomb was formerly surmounted by a kind of erection similar to the Percy Shrine, but this was destroyed in the time of Henry VIII. This is one of the most interesting spots in the cathedral, and a good point from which to view the early English work of Bishop Poore. Some years ago under this platform the foundations of the Norman apse to the choir were laid bare, proving that it was round and that the aisle terminations were square on the outside. There is no old glass in the cathedral, except a few fragments remaining in the south aisle windows. A description of the old glass, however, can be found by referring to an ancient book called the "Rites of Durham."

A detailed account was given of the Galilee Chapel, and on passing to the chapter-house through the cloisters attention was drawn to the ancient Norman door, with its richly ornamented arches of rare design.

An account was given of the restoration of the chapter-house, and the data given by the architect for each constructive feature were listened to with much interest. The monks' dormitory, a room 194 ft. long and 41 ft. wide, was also visited, as well as the library and crypt under. Mr. Fowler finally conducted the party along an outside terrace walk under the Galilee Chapel for the purpose of viewing the massive and curious buttresses supporting the western walls of the fabric. An adjournment was made for lunch, and at 2.30 the members assembled at the entrance to the castle.

The castle was formerly the residence of the "Prince" Bishops of Durham, but in 1837 it was handed over to the Bishop of Durham for the benefit of the University. We are told on the authority of Symeon that William the Conqueror destroyed the palace of the Saxon bishops and ordered it to be built as a castle, on his way to Scotland in 1072 A.D. The crypt chapel probably dates from that period; it is remarkable for its graceful columns and delicately-carved capitals, somewhat difficult to distinguish in the obscure light of this interior; the original herring-bone pavement is worth noting. A gallery on the ground floor leads to the Black Staircase, erected by Bishop Cosin in A.D. 1665; this spacious and richly-carved staircase ascends three or four stories in easy flights, and communicated with what is called the Norman gallery; at some later date the staircase has evidently shown signs of giving way, as circular wooden supports have been added to strengthen the projecting corners. To the left is the Great Hall (A.D. 1284-1311), a large but uninteresting apartment about 100 ft. long by 36 ft. wide; over the south end is the trumpeters' gallery. More interest, however, was taken in the lofty kitchen and buttery hatch, with its quaint oak timbers bearing the name of Bishop Fox A.D. 1499. On leaving the castle the party passed under the ancient gateway, the work of Bishop Pudsey, hung with massive doors of solid oak and iron interwoven in a curious manner.

Hearty thanks were offered to Mr. Fowler for his kindness in explaining the many features of interest encountered in the day's proceedings, and it was felt that the time was too short for a proper inspection of what is perhaps one of the most fascinating groups of ecclesiastical buildings in this country.

HOME FOR BOYS, BELFAST.—The new home for boys at Nazareth Lodge, Ravenhill-road, was opened on the 15th inst. by his Eminence Cardinal Logue. Mr. John Fegan, the builder, has carried out the work from plans by Mr. J. J. M'Donnell, architect, and the other contractors were Messrs. James Baxter & Co., plumbing and gas-fitting; and Messrs. Riddels, Ltd., heating, steam, and cooking appliances.

CHURCH RESTORATION, EAST RETFORD.—The restoration of the East Retford parish church has now been completed. The work, which has been carried out under the direction of the architect, Mr. W. Southall, includes the repaving of the aisles with Minton tiles, and the whole of the stonework has been cleaned and repaired, the plaster stripped off the chantrey walls and the old stonework, the roof thoroughly overhauled, and the portion over the organ-chamber covered with lead. The organ has also been overhauled by Messrs. Bringley & Foster, of Sheffield.

THE ANNUAL DINNER OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE annual dinner of the Royal Institute of British Architects was held on Friday evening, the 13th inst., in the Assembly Rooms, Newcastle-on-Tyne. Mr. John Belcher, A.R.A., President of the Institute, was in the chair, and he was supported on the right by the Duke of Northumberland, Sir Aston Webb, R.A., the High Sheriff of Durham, Mr. H. T. Hare (Vice-President R.I.B.A.), Sir George Hare Philipson, M.D., Sir Walter R. Plummer, M.P., Mr. John Slater (London), and Mr. J. P. Spencer (Mayor of Tynemouth); and on the left by the Bishop of Newcastle (Dr. Lloyd), Mr. J. T. Cackett (President of the Northern Architectural Association), Mr. John Beattie (Deputy-Mayor of Newcastle), Mr. Leonard Stokes (Vice-President R.I.B.A.), Mr. Edwin T. Hall (Vice-President R.I.B.A.), Mr. George Renwick, M.P., Mr. T. E. Collcutt (London), and the Deputy-Mayor of Gateshead (Alderman L. H. Armour). Amongst others present were the following:—Messrs. W. J. Locke (secretary R.I.B.A.), John W. Simpson (London), A. N. Prentice (London), A. W. S. Cross (London), H. Temperley (Newcastle), W. H. Knowles (Newcastle), Jesse Horsfall (Todmorden), P. F. Chisholm (London), Geo. Sherrin (London), G. B. Bulmer (President of the Leeds and Yorkshire Society), Maurice B. Adams (Chiswick), Leonard Martin (London), F. W. Marks (London), F. W. Rich (Newcastle), John Cash (London), H. C. Charlewood (Newcastle), G. P. K. Young (Perth), J. Garry (West Hartlepool), R. Burns Dick (Newcastle), Sir Alfred Gelder (Hull), Messrs. H. O. Tarbolton (President of the Edinburgh Architectural Association), Butler Wilson (Leeds), H. Davis (Scarborough), W. Lister Newcombe (Newcastle), W. A. Waddington (Manchester), C. H. Brodie (London), E. R. Barrow (London), J. M. Henry (Edinburgh), A. H. Crawford (Edinburgh), Malcolm Dillon (Mayor of Jarrow), Edmund Woodthorpe (London), J. W. Boyd (Newcastle), G. T. Brown (Sunderland), W. Milburn (Sunderland), H. Oswald (Newcastle), S. D. Robins (Newcastle), John White (Newcastle), Geo. Reavell (Alnwick), W. St. L. Crowley (London), M. G. Martinson (Birmingham), G. R. Smith (South Shields), J. J. Burnet, A.R.S.A., Alexander Graham (hon. secretary R.I.B.A.), the Mayor of Wallsend (Mr. Harrison), Arthur B. Plummer (hon. secretary Northern Architectural Association), S. Perkins Pick (Leicester), Stockdale Harrison (Leicester), F. E. L. Harris (Manchester), Henry White (Penzance), Joseph Oswald (Newcastle), C. E. Bateman (Birmingham), Robert Cochrane (Dublin), H. J. Blanc, R.S.A. (Edinburgh), J. Walton Taylor (Newcastle), R. Elsey Smith (Edinburgh), A. W. Tanner (London), J. W. Benwell (Carlisle), J. B. Mitchell-Withers (Sheffield), C. B. Flockton (Sheffield), F. M. Dryden (Newcastle), J. W. B. Boyd (Newcastle), G. D. Oliver (Carlisle), C. C. Hodges (Newcastle), W. D. Caröe (London), J. Bruce (Newcastle), W. Hope (Newcastle), Harry Barnes (West Hartlepool), C. F. Newcombe (Newcastle), Roland Rich (Newcastle), the Mayor of South Shields, Alderman J. M. Winter (Tynemouth), J. W. Dyson (Newcastle), J. W. Herring (Sunderland), T. R. Milburn (Sunderland), G. A. T. Middleton (London), F. R. N. Haswell (London), M. H. Graham (Newcastle), J. W. Wardle (South Shields), and W. E. Fenwicke (Newcastle).

The customary loyal toasts were proposed by the President, and duly honoured.

The Duke of Northumberland proposed "The Royal Institute of British Architects and Allied Societies." He said the duty had been imposed upon him of submitting the toast of the evening. Speaking for the allied societies, he should say that they offered a hearty welcome to the Institute. They welcomed them there to the north country, and, so far as he could understand the proceedings of that day, they had done their best to show their visitors as much of Tyneside as they could. The local associations were a matter of great interest to the Institute. It was by strengthening these associations that the real work of the Institute was carried out. And if he was to speak—which he supposed was his proper function—for the general public, who belonged neither to the Institute nor to the associations, all he could say was that they recognised very warmly the good work which both were doing, and they were very glad to see them making themselves acquainted, as far as possible, with the requirements of all parts of the country, and, on the other hand, placing their knowledge and their experience at the disposal of the people. He sometimes thought that for the young man who first adopted the career of an architect there must be food for great discouragement. He did not think that any architects could hope to do much better—say, in ecclesiastical architecture—than their predecessors did 500 years ago. Perhaps he was prejudiced because he lived in a castle, but he very much doubted, so far as the æsthetic side of military architecture was concerned, whether they would do much better than some gentlemen of former days in that direction. When they came to rather later times, and looked at their fine old manor-houses—though they might give them a few less steps to go up and down, and he did not doubt that their sanitary arrangements would be better—he very much doubted, if they would pardon the scepticism, whether they would give them anything more picturesque or more thoroughly English. Therefore he would say to the young architect that if he reflected in this way he might be a little bit discouraged. But if he would go on a step further he thought he would find that there was a great field for his ingenuity and his study, even in this matter-of-fact XXth century. He saw there present the representatives of many great municipalities. He would venture to suggest that England in the old days did not shine particularly in her great public buildings. Of course, there were some very fine public buildings. They had got a little hall called Westminster Hall, of which they were very proud, and other buildings of that sort. But he thought that, as compared with foreign nations, we were in ancient times rather deficient in our public buildings. He believed in that direction there was a great field for ingenuity and genius. But there was a still larger field for their efforts in what perhaps at first sight seemed a humbler line, but one which he believed was at least as important as any other in which they could engage; he referred to the housing of the mass of the population throughout the realm. That was a problem which was not always submitted to the architect. It was too often left to the builder. He presumed that it was at least one of the functions of the Institute to so mould and educate public opinion, and still more to educate the opinion of the profession, as to secure that standard of building which should provide the people of this country with dwellings equal to the civilisation which they had professed to have attained to. And, if he might say so with all respect to them, it was a problem they had not solved. Whether it was capable of solution he did not know. He could only say, as one who had tried to a certain extent to build houses, he had found that to build a good sanitary, comfortable house for the working classes of the country, at a price which would pay a reasonable return on the outlay, was, he would not say impossible, but very difficult indeed. It seemed to him that in this direction there was a large field for the genius of the rising generation of architects. If they had not any chance of exceeding the ability of their ancestors in the æsthetic side of the art, there were claims upon them which they had not in those days, when people cared very little how the lower classes of the population were housed; and they had now at their disposal all sorts of appliances and all sorts of materials which those who preceded them had not. There was one more opening which he would allude to now, and that was the opening which was afforded by the zeal of the Board of Education. The Board of Education imposed upon local authorities a very large number of buildings, and he did not think that the Board always grasped the full necessities of the case. He would suggest that the members of the Institute and those whom they trained might very well devote, as no doubt they did devote, a great part of their attention to assisting local authorities in their efforts to meet the requirements of the Board of Education at some reasonable rate, and without the

necessity of disfiguring the landscape with horrible structures of which he did not think any of them would approve. He could only, in conclusion, express, on behalf of those for whom he spoke, their very deep sense of the services which their Institute rendered not merely to art, but also to the practicalities and the absolute and essential necessities of life. It was by the exertions which they had made, it was by the success of their efforts to ally themselves with the various local associations, it was by their energy in paying such visits as those to the various parts of the country, that they confidently believed they were securing a high standard of architectural work and architectural science. There was no doubt an unlimited field for their exertions in the future. He was perfectly certain of this, that there was no body of men upon whom the welfare of the country so much depended as those who had charge of the buildings in which we lived and the buildings in which we had to transact our business. He would not detain them longer, but would give them, in the most hearty manner, the toast of "The Royal Institute of British Architects and the Allied Societies."

The President responded. He said he had to thank the company on behalf of the Institute for the way in which they had honoured the toast. They appreciated the manner in which his Grace had spoken of their work and those matters which concerned them so deeply—the housing of the poor, education, and other matters they all had very much at heart; and no doubt the words he had spoken would bear fruit. As the representative body, the Institute realised its responsibilities, and it recognised that any real advance in their position as architects would be as the members of the allied societies and of the Institute stood shoulder to shoulder. Art flourished best in an atmosphere of peace, and their work would excel as they cultivated cordial and brotherly relations. They might have differences of opinion sometimes, but these, he thought, might be regarded as a sign of healthy vitality. They might differ, for instance, with respect to the subject of registration, but they were all agreed that the education and training of the architect was absolutely necessary. Ample provision was being made for that. All they had to do was to find sufficient inducement for the qualification. The council of the Institute had no intention of allowing this matter to rest, and they had already appointed a sub-committee to take evidence and to consider the possibility of coming to some conclusion which might if possible satisfy all. He regretted that the Mayor, having had to attend another function, was not able to be present with them that evening. But he publicly thanked his Worship and the Mayoress for their kind reception of the members of the Institute on the previous evening. It was satisfactory for them to feel that they were in close touch with the municipal authorities everywhere; that, owing to the nature of their work and training, they were able to give good counsel and advice and assistance; and that they were able to co-operate with them in those public works which were for the good of the community at large. They were always willing, as architects, to furnish voluntarily advice and assistance in such matters as occasion might arise. He would like also to thank those gentlemen who had done so much to make their visit pleasant. Newcastle was a city of great interest to them. It had been regarded, he believed, as a dull, black place, but they had found it full of picturesque beauty. The first objects that caught their eyes as they approached the city were the old Norman "Keep" and the lantern tower of St. Nicholas's Cathedral, whose beautiful corona was not excelled by any of its rivals. The buildings which rose from the water's edge in serried ranks were worthy of being seen and studied from various points of view. Looking down from that wonderful engineering achievement, the railway viaduct, whether by day, or in the dusk of the evening, when the lights of the shipping mingled with the lights upon the shore and the hillside, the view was romantic and fascinating. The bridge itself embodied all that was attractive in engineering work. Its boldness, its daring, its directness of purpose, all appealed to them. He had no doubt that when Stephenson's work was in progress it must have very much astonished the citizens of Newcastle, and have alarmed them lest it should destroy the appearance of their city. But he could not help feeling that the bridge was really an addition to its attractiveness as much, perhaps, as its usefulness had added to the importance and prosperity of the city. He expressed his thanks for the great pleasure they had derived from their visit, and for the hearty welcome they had given them.

Mr. J. T. Cackett, President of the Northern Architectural Association, responded on behalf of the Allied Societies. He said the objects of the allied societies and of the Institute were the same—the encouragement of the association of architects throughout the country, and to consider, in the second place, the possibility of advancing the knowledge of the art and science of architecture. But there was this difference between them—that they of the allied societies worked in a very much humbler sphere. The R.I.B.A. worked in the metropolis of the world, and the Northern Architectural Association worked in the metropolis of the north. So far as the subject of education was concerned, they had excellent facilities at the College of Science for the passing of the curriculum of the Royal Institute; and, in addition, the Northern Architectural Association held classes and offered prizes, and they were advancing very steadily, he might say, in the way of education of the future generation of architects. He had no doubt that the allied societies were also making progress in this direction. There was another difference between them, and it was one to which he should like to allude—the President had already referred to it—that the London County Council was consulting the architects with regard to new streets and thoroughfares and so on in the metropolis. It was very pleasant to note the results of that consultation and the effect of the advice that had been given. He expressed the hope that all local authorities would adopt the same principle. He was sure that nothing but good would follow.

Sir Aston Webb, R.A., proposed the toast of "The Guests." He said he was honoured by being entrusted with the "other toast of the evening." They were all delighted to see their guests there. But he had this curious feeling: somehow or other he felt very like a guest himself rather than a host. They had been so kind to them and had shown Newcastle to them so well that he really thought they had been their hosts and the members of the Institute had been their guests. But for the moment he would ask them kindly to consider themselves as their guests. They were grateful to the Duke of Northumberland for having come there that night and for having spoken as he had done. It would ill become him in that northern city to say anything about his Grace, but they in the south also knew him as the wise and sagacious President of the Royal Sanitary Institute, and that in many other ways he was always ready to take a deep interest in and to devote his time to the welfare of the people. They were honoured also in having representatives of the Church and the State and the municipalities. The Church, in which they recognised a generous and discriminating patron, was represented by the Lord Bishop of Newcastle. They thanked him also for having come there. They had had the delight of visiting the cathedral that day and of seeing for themselves the tower which had always the enthusiastic admiration of architects as being a unique example in the daring of its construction and in the grace and beauty of its design. And they had all delighted in the exquisite wood-work of the interior by the late Mr. Johnston, admirably carried out by Mr. Ralph Hedley. He felt sure that any city should be and was proud of having two citizens who could beautify their city by work which would remain, he was sure, the object of admiration for centuries to come. They had also representatives of the city in the members of Parliament, whom they also thanked for having come. Architects, he supposed, were not especially active in politics, but they certainly, as Englishmen, admired the self-denying labours of their members of Parliament, and condoled with them in the late hours they had to keep. There were some among them who were rather inclined to add to those labours by asking Parliament to take some interest in their affairs. Personally, he was bound to say that he thought they had already enough to do; and perhaps it would be better if they tried instead to manage their own affairs—but, as Kipling said, that was another story. They had also representatives of the great municipalities there that night, and he thought, as the Duke of Northumberland had said, that they must look in the future—and they architects naturally did look—to the municipalities for the greater portion of their work, for the great builders of the future would be the great municipalities. He had heard it whispered that Newcastle had its castle in the air, and that some day it would take form in the shape of a new town hall. But, at any rate, they took an interest in almost all the work which their municipalities had to do, and they recognised the care that they took for relieving the poor and for providing clean, healthy, and sanitary dwellings. They looked to them also, and believed that in time they would turn their attention to the beautifying of their towns. Architects believed that it was the duty of the municipality not only to attend to hygienic matters, but also to provide spots of beauty in every town, where men could come out and breathe the air and see the sky and the green trees, the fountains, and the flowers in their beauty and colour—some spot where men could pass through with a smile. He was afraid that in some of our towns at present men were apt to pass through with a sigh on their lips, or something even worse; and they hurried through them without any feeling of hope, but left them without regret. There was a dull monotony about our towns, though architects were ready to place their services at the disposal of municipal corporations; and each city had its own men of taste, architects and others, who were able and willing to advise them on these public improvements. They certainly hoped that in future their municipalities would avail themselves of that advice, and that, even if they had to come upon the rates for something, the æsthetic side should not be altogether forgotten. They welcomed all their guests. He gave them the toast of "The Guests," coupled with the name of the Lord Bishop of Newcastle (Dr. Lloyd).

The Bishop of Newcastle responded to the toast. He said, speaking on behalf of all those whom they had been kind enough to invite, he might say they considered it an honour and delight to have been there with them that evening. Personally, it was no little pleasure to him to be associated in that or in any other way with such a noble profession as he believed theirs to be. Some of his best friends in life had belonged to their profession, and he owed a great deal, in more ways than one, to those of their profession whom he had had the pleasure of knowing. But, apart from that, he thought we did owe a very great debt of gratitude to their noble profession; certainly, speaking for his own part, Church folk, and clergy amongst church folk, most of all. What did they not owe to those who had devoted their noblest conceptions to the ennobling of the human kind? He had said that their profession was a noble one, for surely anything was noble which tended to the elevating and ennobling of other people. And if it be true, as he held it to be true, that a thing of beauty, whatever it might be and wherever they might have it, had an ennobling influence, then he thought that architecture must hold the very highest place in these highest fields of beauty. He believed—indeed, he knew it from his own experience to be a fact—that beautiful buildings in the most abject surroundings of poverty and misery had a very far-reaching and ennobling effect. And he thought a beautiful church must have the most ennobling effect of any building they could put up. A beautiful building would appeal, almost unconsciously, to the passer-by, and it was this that made them so indebted to their profession. He should even be tempted to envy the possessor of the mind and heart that could conceive any great thing—the man of science when he felt himself on the brink of a great discovery, the joy and excitement of feeling that he was not only to be a discoverer, but that by his discovery he was to exercise

an enormous influence for good amongst his fellows; the musician who could conceive beautiful pieces of music; and the painter who could conceive some magnificent picture; and the architect who could conceive in his mind some magnificent idea, like some beautiful cathedral. He was sure they would sympathise with him when he said he pitied very much the architect who had a great idea in his mind and was not allowed to work it out, or if, when the work was growing under his hand, in the middle of it fresh ideas came to him he was not enabled to embody them. That must be a very irritating thing, and one of the chief difficulties to men of their position. He urged that in the work of educating the younger men who were entering the profession they should keep before them a high ideal. The higher the profession, the greater the fall if they allowed themselves to get down from the high ideals. It should be their aim to think not what they could get out of it, but what they could put into it. He did not mean to preach to them, but it was a matter he felt very deeply himself. He thanked them very warmly, on behalf of the guests, for the kind way in which they had received the toast and for the kind invitation they had given to their guests.

The proceedings then ended. During the evening music had been provided by the orchestral band of the Northumberland Hussars.

NOTES ON NEW BUILDINGS IN LONDON.

II.—THE "COUNTRY LIFE" OFFICES IN TAVISTOCK-STREET, W.C.

IT gave the writer of these "notes" a great amount of pleasure to see the successful and pleasing architectural treatment of the façade of this building fronting on to Tavistock-street, which adds a note of cheerfulness to the somewhat depressing effect produced by the buildings in the vicinity of Covent Garden Market.

The façade comprises four stories in height, with a range of seven voids, is built of small red bricks of a pleasingly subdued tone, with Portland stone for the rusticated basement story, and the same material is skilfully employed for the window dressings, cornice chimneys, and the main entrance, and the whole shows a welcome and harmonious treatment of modern English Renaissance. The ornament is introduced with restraint, is in good taste, and helps to give a feeling of refinement to a somewhat severe though stately-looking façade. From the pavement level springs the rusticated basement story, which is carried up to the level of the top of the key-stones of the windows at the ground-floor level, giving a feeling of strength and stability which is most agreeable; and here one's attention is drawn to the superb examples of the stone-carver's craftsmanship in the delicately-designed key-stones to the windows of the ground-floor level, which represent the products of Mother Earth in a charming manner.

The windows at the mezzanine level, with their semicircular heads and sills and architraves, have a decorative and pleasing effect in striking contrast to the long though well-proportioned windows of the principal story, which are a prominent feature of the façade, and one cannot fail to appreciate the use of small panes of glass in the sashes. The windows of the upper story are treated simply and effectively, and directly above them the cornice, with its simple horizontal lines of moulding, has a restful effect, but somehow one feels that the plain brickwork between the cornice and the eaves deserves a more ornamental treatment.

Growing out of the tiled roof in a most natural manner are two big chimney-stacks—good examples of how such features can be treated, and in this instance giving an aspiring influence to the façade when looked at from the pavement just opposite the junction of Burleigh-street and Tavistock-street, and a sense of perspective to an otherwise subdued-looking street front.

And now one cannot help admiring the most striking feature of the design: the main entrance, with its round head and ornate fanlight, the whole framed in by a pleasing combination of pilasters surmounted by a semicircular pediment and cornice, with delicately-carved caps and frieze linking together the pilasters, and reaching up to and claiming the centre window of the principal story, with its pointed pediment as part of the composition, which has the happy effect of emphasising the main entrance in a refined and pleasing manner. The brilliant green colour of the doors rather suggests the title of the favourite publication which will issue through the portal to its numerous readers. And, in conclusion, one cannot but feel grateful to the architect who has succeeded in designing an interesting and satisfactory addition to London street architecture. There is a stamp of truth about the building which reminds one of the motto of the Architectural Association: "Design in beauty, build in truth."

THE PORTABLE STEAM CRANE.

THE portable steam-balance crane is used most extensively by contractors, builders, and timber and stone merchants for coaling vessels, for unloading cargo, in steel works, in harbour construction, and on permanent way. There are two broad types in which it occurs—the vertical, or older type, and the horizontal. The difference is that in the first-named the longitudinal axes of the cylinders are situated either vertically or at a slight inclination; in the latter they are set horizontally. This difference alters the whole arrangements of the gearing and the shapes of the frames. In the vertical cranes the gearing is situated high up, and the side frames, or cheeks, are tall; in the horizontal, the gearing is low down, and the cheeks are correspondingly low. The first is more convenient in one respect, being more roomy and capacious for the arrangement of gearing; the second is better for the attendant, because he is able when standing at the lever-box to see the whole of the mechanism of the crane below him, and the movements of the load better than with cranes of the vertical type, in which tall side frames and girders somewhat obstruct the sweep of vision. The vertical cranes are the more costly. We will give our first consideration to these.

The portable, or locomotive, steam crane of vertical type is usually constructed in powers between 1 ton and 20 tons. Powers under 3 tons, or over 10 tons, are, however, not nearly so often constructed as those which lie between 3 tons and 10 tons. Very small cranes are not economical, and there is a want of stability in portable-balance cranes which renders them undesirable for very heavy loads. The elements of instability are due to the gauge and to the radius of the load. The gauges most common are 4 ft. 8½ in. and 7 ft., and foreign gauges, including the metre, are sometimes called for. The radius of the load will range from about 15 ft. to 30 ft. The overturning of these cranes is due to the want of proper precautions for the ensuring of stability. The truck can be prevented from upsetting by the use of blocking girders, or rail clips, and the weight of the load on the jib can be counterbalanced by the mass of the crane, the boiler, and tank, and additional weights.

Essentially the steam crane consists of a pair of side frames, or cheeks, which carry the engines and gearing, a jib for lifting and lowering, a centre pillar, or post, round which the frames and jib revolve, or slew, and a travelling truck.

The side frames are usually separate castings, bolted to certain cross girders standing between the frames at right angles. The girders carry some of the essential working parts, as rollers for slewing, brackets for vertical shafts, which actuate slewing and other motions, attachments for levers, etc. The cylinders, generally two in number, are bolted to the side frames, and actuate the lifting and other gears directly or through intermediate gear. In some of the horizontal cranes side frames are dispensed with, and a massive casting of the boxed type takes its place, carrying the whole of the gear for lifting, slewing, and other movements, together with cylinders and boiler.

The base of a steam crane is either a fixed foundation or a travelling truck. In either case the centre pillar, or post, is stepped into the centre of a massive casting and firmly fixed therein. The whole of the superstructure slews round and upon this. The foundation is always massive. If it is fixed, the main casting is firmly bolted to a foundation-plate, bedded several feet in concrete. If travelling, the centre casting into which the post is stepped is enclosed in a rectangular framing of timber, wrought-iron, or steel, provided with suitable bearings for the axles of the running wheels. The travelling motion is operated from the engines on the side frames in light cranes. In heavy cranes there is generally a separate pair of cylinders and gearing for travelling.

Generally some extra balance is required in order to ensure the stability of the crane when working. When a crane is fixed—that is, when it does not travel, but merely slews—this balance is a constant quantity. But when a crane travels also on a truck or carriage the balance is only calculated for lifting the full load in the direction of the wheel base and to a few degrees only on each side of it. As the crane is slewed diagonally across the wheel base it would be upset by reason of insufficient balance. Hence, an artificial wheel base is devised by the use of blocking girders, or of rail clips, by which the stability of the crane is assured. Light loads, however, much below the maximum capacity of the crane can be lifted right across the truck at right angles with the wheel base without upsetting occurring.

Where there is a good permanent way, rail clips afford the most convenient means for holding the crane down. If the rails are loosely laid, as in many contractors' yards, then blocking girders are safer, though cumbrous. With a narrow gauge and a long jib girders should always be preferred to clips.

The clips are hung from the lugs cast or bolted on the truck just over the rails. They are loosely shackled, but held against the rails by a coupler, or link, and are instantly detachable.

The blocking girders consist simply of **H** irons, or joists, slid along between straps bolted to the truck. Timber wedges being driven between the underside of the joists and the ground effectually block the crane. The same effect is secured by using screws, having their bearings in brackets which stand out from the truck sides, the ends of the screws being brought to bear upon blocking laid upon the ground, or directly upon the ground itself.

It is not necessary to block a crane when the longitudinal axis of the jib is in line with the longitudinal axis of the truck, nor even when they are several degrees out therefrom. The only exception to this occurs in cranes having unusually long jibs carrying maximum loads. But, as the jib is slewed round, an angle is reached at which the crane will upset unless blocked. This is a matter for experiment, and the girders must be long enough to ensure stability under the maximum load lifted at the maximum radius. When rails have to be laid down specially for a crane or cranes, the gauge may be made wide enough to dispense with the necessity of blocking.

To prevent the load on the jib at a long radius from tilting the upper framework heavily forward, so causing excessive pressure, or friction, on the front rollers, there is a space usually left at the back under the boiler to receive supplementary, or balance, weights. The quantity required varies greatly in cranes of different radii and loads.

Jibs are constructed of timber and of iron and steel. A lattice jib of steel is the most durable, and a swan-necked, or bent, jib usually the most convenient, because the load can be brought in closer to the crane when raised to its maximum height.

The jib of a crane may be fixed or movable; in the latter case it is a derricking jib, and in a steam crane there is special derricking gear for lifting and lowering it within the limits specified. This is an extremely useful arrangement, enabling the crane to take a larger or smaller sweep, so covering an extensive area of ground, and thus increasing its usefulness. The derricking motion is operated by the engines.

The weight of the whole of the crane superstructure is carried upon the top of the post and upon rollers running on a circular path, or race. Practically the weight is carried on the rollers, severe pressure on the post coming only when the load tends to tilt the crane at the top. Four rollers are generally used—one in front, one at back, one bearing on each side against the post. The last

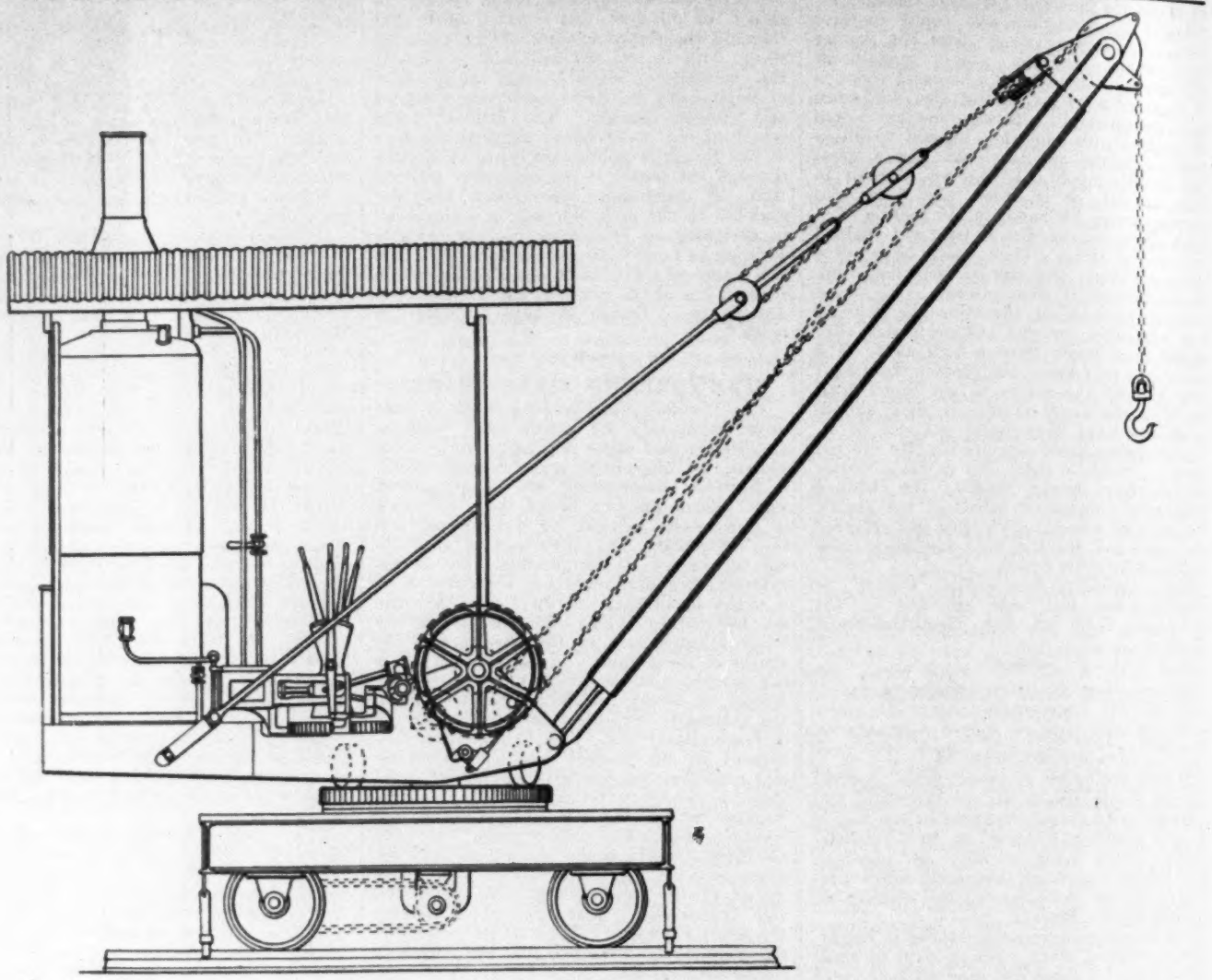

Diagram of Portable Steam Crane: "Horizontal" Type.

two, however, do not sustain pressure, but simply steady the superstructure. But in large cranes there are often two rollers at the sides, travelling on the race. In large cranes also it is a frequent practice to substitute two rollers at front and back for the single ones used in the smaller cranes. This gives the superstructure a more steady motion. The wear on these and on the race is very severe, hence steel is used largely instead of cast-iron, which wears very rapidly, involving frequent renewal in the case of cranes subject to constant use and severe duty. The same remark applies to most of the gearing, but especially to the pinions, which run at high speeds, and wear rapidly if in cast-iron.

The steam pressure used on cranes is not high, seldom exceeding 80 lb. per square inch. Ordinary vertical boilers and multitubular modifications of that type are invariably used, being cheap, easily attended to, and not being very liable to get out of order. It is conducive to economy of fuel, of durability of the plates, and to the comfort of the attendant to lag the boiler with wood or with sheet-iron.

The boiler is placed at the extreme hinder end of the crane upon a suitable footplate, and its weight acts as a portion of the counterbalance to the fore part of the crane with the jib.

It has the following fittings and mountings:—A safety valve of the common or of the lock-up type, or both, blow-off tap, water gauge, try cocks, pressure gauge, manhole, mud holes, and fire-door ring for fire bars. The ashes are raked on to the footplate on which it stands.

The double engines are of simple type; quick running, driving the engine shaft through cranks, or crank discs, in which the pins are set at right angles. Eccentrics for forward and backward motion are keyed on the engine shaft, a pair for each engine, to operate the slot-link reversing motion, the levers for which are brought to the lever-box adjacent to those for actuating the movements of the gearing. The link motions are usually of wrought-iron or steel, case hardened. The cylinders are lagged with sheet-steel or with wood.

The steam pipes are usually made of wrought-iron, copper being too expensive for average use, and being charged for as an extra. The steam is taken from the safety valve casing, where it is driest.

All properly constructed modern cranes have provision for simultaneously operating all the motions. Travelling and slewing, and either lifting or lowering, if done by the crane, can be done at one time without reversing the engines. To alter the direction of travel, or lower by gear, reversal of the engines is necessary. The simultaneity of movement is effected by means of arrangements of friction clutches, driving bevel, and spur wheels, everything being operated from the engine shaft, and the reversing levers are all located in one box on the left-hand side of the crane where the attendant stands.

In cranes exposed to much weather the whole of the superstructure, excluding the jib, is covered in with a house of corrugated-sheet. Much rust and wear are thereby prevented.

Cheap portable cranes for temporary works are bought in large numbers by contractors, and special types are manufactured to supply this demand. The "contractor's crane" is not a good piece of machinery regarded from the engineer's point of view, and some of the best firms do not care to manufacture it. Many firms make it, however, and the result of keen competition is evident in the cheap, roughly constructed, and noisy steam cranes of from 2 tons to 10 tons capacity, which occur in such numbers in the construction of docks, railways, and large public works. Considering how roughly these cranes are made, how roughly they are used, and how they are sometimes overloaded, the marvel is that accidents are not more frequent.

Yet these cranes, in spite of their faults, fulfil a very useful place. If a contractor wants any number of cranes, between half a dozen and fifty, and requires those cranes, moreover, for only a single contract lasting a few months or a year or two, the prices charged for high-class cranes by the best makers would involve too great an outlay. After a large contract is finished the cranes, with the rest of the plant, are often sold in preference to storing them. Hence, these are bought for temporary service only, just to do a certain amount of work and no more, conditions entirely different from those which exist in cranes bought for permanent service in a private yard. The result is that a first-class crane will cost a third as much again as a contractor's crane of similar power. But when the latter is worn out, the former will be requiring nothing beyond a few trifling renewals and repairs.

SIR HENRY TATE MEMORIAL.—At the opening, on October 11, of the Tate Library Garden, formerly the Oval, Brixton, was unveiled a bust of the late Sir Henry Tate. The bust, executed in bronze by Mr. Thomas Brock, R.A., rests upon a pedestal in the middle of the garden, which Lady Tate, in fulfilment of her husband's behest, has purchased and laid out for the public benefit; the garden is close to the library built by Sir Henry Tate.

THE MILAN INTERNATIONAL EXHIBITION, 1906.—We are officially informed that the King of Italy will offer prizes to the extent of 1,600*l.* to exhibitors at the Milan Exhibition. This amount will be divided as follows:—1, A prize of 200*l.* for automatic safety couplings for railway rolling stock; 2, a prize of 200*l.* for the best method of testing high-voltage electric currents without danger to the operator; 3, a prize of 400*l.* for the best and most original exhibit of machinery or manufacturing process; 4, a prize of 200*l.* for the best established method of distributing healthy and pure milk in centres of population; 5, a prize of 400*l.* for the best type of popular dwelling adapted to the climate of Northern Italy; 6, a prize of 200*l.* for motor boats. In addition to the foregoing there will be given a national prize of 200*l.* to the public institution or private society which during the last ten years has been most successful in the work of reclaiming waste lands in mountainous districts and in the improvements of pasturage.

THE LONDON COUNTY COUNCIL

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. E. A. Cornwall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Bethnal Green Guardians 2,870*l.* for poor law purposes; Chelsea Borough Council 3,500*l.* for contribution to cost of street improvement (sanction to loan); Finsbury Borough Council 2,278*l.* for construction of convenience; Lambeth Guardians 4,350*l.* for poor law purposes; Lambeth Borough Council 9,827*l.* for paving works; Lewisham Borough Council 2,660*l.* for purchase of horses; St. Pancras Borough Council 1,874*l.* for electric lighting; and Woolwich Borough Council 11,820*l.* for town hall and offices, and 16,275*l.* for electric lighting purposes.

Removals from, and Additions to, the List of Contractors Selected to Tender.—The Education Committee reported as follows, the recommendations being agreed to:—

"We submit recommendations dealing with the cases arising since our last report to the Council on July 18, 1905, concerning the additions to, or removals from, the Council's selected list of contractors to be invited to tender for works to schools. In each proposed addition to the list the usual inquiries have been made by the solicitor and the architect (Education). We recommend:—

(*a*) That the name of Stimpson & Co., of Candahar-road, Battersea, be removed from the list of contractors selected to tender for new schools and enlargements. . . .

(*c*) That the name of G. Godson & Sons, of Pembroke Works, Kilburn-lane, be added to the list of contractors selected to be invited to tender for the erection of new schools and additions to schools.

(*d*) That, subject to the conditions named below, the names of the following firms be added to the list of contractors to be invited to tender for structural alterations, repairs to school buildings, etc.:—(i.) G. Godson & Sons, Pembroke Works, Kilburn-lane; (ii.) John Christie, 2, Richmond-road, Uxbridge-road station, structural alterations to the value of 2,000*l.* One year on probation as from July 24, 1905.

(*e*) That the name of J. A. Stayner, of 206-8, Bermondsey-street, be retained on probation for one year as from June 22, 1905, on the list of contractors to be invited to tender for repairs to buildings, etc.

(*f*) That the name of Newell & Lusty, of 24 and 25, Wilson-street, Poplar, be added temporarily to the list of contractors to be invited to tender for repairs to buildings, etc., on probation for one year as from September 25, 1905.

(*g*) That the names of the following firms be added to the list of contractors to be invited to tender for providing and fixing iron staircases:—(i.) F. A. Norris & Co., of 11a and 12, St. Andrew's-hill, Queen Victoria-street; (ii.) Merryweather & Sons, Ltd., of Greenwich-road.

(*h*) That the applications of the following contractors to be placed on the list of contractors selected to tender for works as follows, in connexion with London County Council schools, be declined:—(i.) F. Smith & Co., Carpenter's-road, Stratford, structural alterations and repairs to buildings; (ii.) T. Wontner-Smith, Son, & Co., Isledon Works, 393, New North-road, structural alterations, cleaning, and painting; (iii.) C. Pearce & Son, 47, Scott-road, Sheffield, heating apparatus; (iv.) The Nautilus Fire and Heating Company, 34, Berners-street, heating apparatus, stoves, ranges, etc.; (v.) A. T. Peyton, 18, High-street, Lewisham, cleaning, painting, etc.; (vi.) Curd Brothers & Co., 95, Chelverton-road, Putney, painting, plumbing, etc.

(*i*) That the application of B. E. Nightingale, of Albert-embankment, for the re-instatement of his name on the list of contractors selected to tender, be declined."

Tramways.—On the recommendation of the Highways Committee it was agreed:—

"That authority be sought in the session of Parliament of 1906 to enable the Council to construct new tramways as follows:—(i.) From the 'Plough,' Clapham (London County Council tramways), *vid* Clapham-common, north side, and Cedars-road, to Lavender-hill (London County Council tramways); (ii.) from Seven Sisters-road (existing tramways), *vid* Amhurst Park, to Upper Clapton-road (existing tramways); (iii.) from Aldgate (existing lines), *vid* the Tower-bridge Northern Approach, to a point near the Tower-bridge; (iv.) from the Lea-bridge-road terminus (existing tramways), *vid* Lea-bridge-road, to Upper Clapton-road (existing tramways); (v.) from Tooting-broadway (London County Council tramways), *vid* Mitcham-road, to the county boundary near Tooting Junction railway station; (vi.) from High-street, Streatham (London County Council tramways terminus), *vid* Streatham High-road, to the county boundary at Norbury, with down line *vid* Gleneldon-road, Bournevale-road, and Stanthorpe-road; (vii.) from near the Marble Arch, *vid* Edgware-road, Maida Vale, and High-road, Kilburn, to the county boundary at Cricklewood."

The Highways Committee also reported, and it was agreed:—

"(*a*) That the execution of the tramways construction works between the open approach to the tramway subway in Theobald's-road, and the existing terminus in Theobald's-road, be transferred from the Works Committee to Messrs. J. Mowlem & Co., Ltd.

(*b*) That the expenditure sanctioned on July 11, 1905, in respect of the tramways construction works to be executed under the direction of the Works Committee, be reduced from 19,000*l.* to 17,300*l.*"

Improvements.—The following is a summary of proposals by the Improvements Committee, which were also agreed to:—

Improvement.	Estimated cost of the Improvement. Property.	Paving works, excluding the cost of laying down and paving the tramway track.	Total.	Estimated net amount to be charged as for street improvement after deducting contributions, and the sums (if any) to be charged to the tramways account.	Annual charge on the rates for interest on and repayment of debt calculated on the net amount to be charged as for street improvement. Amount.	Equivalent to a rate in the £ of—	The annual charge for interest decreases each year by—
1		2	3	4	5	6	7
	£		£	£	£	d.	£ s. d.
(i.) Mitcham-road (Tooting High-street to Tooting-junction) ..	Wandsw'th £16,000	12,200	28,200	18,800	930	·00536	10 7 1
(ii.) Edgware-road, High-road, Kilburn, and Shoot-up-hill (Marble Arch to Cricklewood).....	St. Marylebone — Paddington £58,000 Hampstead £23,500	— 2,350 10,150	94,000	62,667	3,099	·01786	34 10 5
(iii.) Lea Bridge-road (Lea Bridge-road to Lower Clapton-road).	Hackney £17,500	3,100	20,600	13,734	679	·00391	7 11 4
(iv.) York-road, Falcon-road, and Lambeth-road (Wandsworth to Westminster)	Wandsw'th £12,000 Battersea £5,000 Lambeth £45,150	2,570 900 4,030	69,650	46,434	2,296	·01323	25 11 7
(v.) Streatham High-road, Gleneldon-road, Bournevale-road, and Stanthorpe-road (Streatham to county boundary).....	Wandsw'th £77,000	20,200	97,200	59,600	2,935	·01691	32 13 6
Total.....	£254,150	£55,500	£309,650	£201,235	£9,939	·05727d	110 13 11

List of Rates of Wages and Hours of Labour.—The Works Committee reported as follows, the recommendations being agreed to:—

"In the Council's list of rates of wages and hours of labour the rate of pay of French polishers is 8d. an hour. There is no agreement in force between the association of employers and the trade union with regard to the rate of pay for this class of employee, but we are satisfied that the rate in practice obtained in London is 9d. an hour. We recommend:—That the Council's list of rates of wages and hours of labour be amended by the substitution of 9d. an hour for 8d. an hour as the rate of pay for French polishers."

Trees in Kingsway.—On the recommendation of the Improvements Committee it was resolved to authorise an expenditure not exceeding 300*l.* in connexion with the planting of trees in Kingsway and Aldwych. Up to the present 124 trees have been planted in those thoroughfares, and it is calculated that 116 will be necessary to complete the work. The total cost of providing and planting the 240 trees and providing iron tree-guards will be 825*l.*

Paving of Kingsway and Aldwych.—Mr. Dew asked the chairman of the Improvements Committee why one portion of Kingsway and Aldwych was being paved with wood and the remaining part with asphalt. Mr. Horniman replied that a certain portion of the new thoroughfares came within the Borough of Holborn and the other portion was in the City of Westminster. It was usual to consult the different local authorities as to the material they wished new roads to be paved with, because hereafter they would have to maintain the thoroughfares. That course was followed in this case, and one authority desired wood and the other asphalt.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hammersmith.—A projecting sign at the Art Metal Works, Scrubs-lane, Willesden (Messrs. Caslake & Co.).—Consent.

Woolwich.—A building on a site abutting upon the northern side of High-street and eastern side of White Hart-lane, Plumstead (Mr. J. O. Cook for the directors of the London and Provincial Banking Co.).—Consent.

Lewisham.—Porches to twelve houses in Tannsfeld-road, Sydenham (Mr. F. S. Eldridge).—Consent.

St. George, Hanover-square.—Retention of a projecting balcony at No. 47, Upper Grosvenor-street, St. George, Hanover-square (Mr. R. G. Hammond for Mr. J. Garlick).—Consent.

St. George, Hanover-square.—A projecting stone porch and balcony at No. 51, Upper Brook-street, St. George, Hanover-square (Mr. R. G. Hammond for Mr. J. Garlick).—Consent.

Strand.—Two projecting oriel windows to a building on the western side of Kingsway, Strand (Messrs. D. Cubitt, Nichols, Sons, & Chuter for Messrs. W. H. Smith & Son).—Consent.

Hackney, Central.—Buildings on the southern site of Darnley-road, Hackney, between No. 1, Darnley-road and No. 222, Mare-street (Messrs. W. Bradford & Sons).—Consent.

Paddington, South.—A water-closet on a lead flat in front of No. 37, Gloucester-square, Paddington, to abut upon Radnor-place (Messrs. Gillow & Co. for Mr. C. Oliverson).—Consent.

Hampstead.—Bay windows to two houses on a site approached from the western side of Branch-hill, Hampstead (Mr. C. B. King).—Consent.

Marylebone, East.—A two-story addition to No. 49, Avenue-road, St. Marylebone, to abut also upon Acacia-road (Messrs. Anscombe & Ringland for Mr. J. W. Jubber).—Consent.

Poplar.—An iron and glass shelter in front of the Prince's Theatre, East India Dock-road, Poplar (Messrs. Owen & Ward for Mr. C. Sounes).—Refused.

Width of Way.

Battersea.†—Additions to No. 110, Church-road, Battersea (Messrs. J. A. J. Woodward & Son for Mr. J. Draper).—Consent.

Hackney, North.—A deviation from the plans approved for the erection of buildings on the east and west sides of a roadway leading out of the north side of Farleigh-road, Hackney, between Nos. 3 and 5, so far as relates to an increase in the heights of the building on the west side of the street (Mr. G. H. Capper for Mr. A. C. Jackson).—Consent.

Limehouse.—An addition to a building on the south side of Hunt's-mews, Glamis-road, St. George-in-the-East, with external walls at less than the prescribed distance from the centre of the roadway of Hunt's-mews (Mr. J. M. Knight for Messrs. Meredith, Drew, & Co.).—Consent.

Dulwich.—A two-story building at the rear of No. 184, Camberwell-grove, Dulwich, to abut upon Stories-road, with external walls at less than the prescribed distance from the centre of the roadway of Stories-road (Mr. A. Laycock).—Refused.

The recommendation marked † is contrary to the views of the local authority.

CHRIST CHURCH, WATFORD.—A new church has been consecrated at Callow Land, which will for a while serve as a chapel-of-ease to St. Andrew's. The fabric, constructed of red brick, after designs by Messrs. Hudson & Hunt, of York-place, Baker-street, will contain 800 sittings, and will cost about 8,000*l.* The site is given by Lord Essex.

ARCHITECTURAL SOCIETIES.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—On Tuesday last the eighth annual meeting of the members of the Architectural Association of Ireland was held at 15, South Frederick-street. Mr. Henry Allberry occupied the chair. The annual report stated that the last session was from every point of view one of the best since the Association was re-established in 1896. The total increase in membership during the year was thirteen, bringing the roll up to 138. The papers read had been interesting and instructive. As usual, the competition for the prizes offered was disappointing. The President's prize and the Vice-President's prize produced only one competitor each; the travelling studentship two; and the Institute prize three. The drawings, designs, and models were of considerable merit, and indicated an improvement in the standard of draughtsmanship and design in the younger members. Regret was expressed that no steps had as yet been taken by the senior body to establish an Irish examination for qualification for membership of the R.I.A.I., which, it was hoped, would have the effect of aiding the Association in its educational work. On the motion of Mr. Sparrow, seconded by Mr. Beckett, the report was adopted. Consideration of the financial statement was postponed owing to the inability of the Treasurer to be present. The President then delivered his inaugural address, in which he dealt with the general work of the Association and the beneficent results which had already followed from its revival. The members were quietly working to devise the greatest educational benefit that they could from the Association with the additional desire to uphold the standard of the profession in the country. Much progress had been made in architectural education during the last eight or nine years in Dublin, and even in Ulster a society of architects had been established; but they must all deplore the increasing tendency to call in extraneous assistance whenever a building of any importance had to be designed. Attention had recently been called to the number of buildings which had lately been carried out by English and Scotch architects in this country; and there was a rumour that the design of the buildings for the forthcoming Dublin Exhibition would emanate from across the Channel. Architects in good practice ought to heed the signs of the times and take thought for their successors by helping forward their education. Their policy should be that of the open door, welcoming all competition, and those who had to pay had the right to employ whoever they wished; but if they wanted proper work done, with local materials, and in the manner best calculated to suit Irish taste and ideals, let them employ an architect who knew his work, knew the material in which he designed, and one who had drawn his inspiration from the needs of his own country. It was proposed to establish a museum in connexion with the Association, in which would be placed samples of good, bad, and indifferent building materials. The method of treating them by craftsmen would be shown. During the meetings which considered the question the Association had been in touch with the Dublin Development Association, and Irish materials would be given a prominent place, for it was a knowledge of the materials ready to hand that proved the trained architect, and incidentally exercised an influence beneficial to his clients. In the fostering of local industries an architect could play a prominent part. Not only could he give an impetus to home manufactures by specifying their goods, provided they were equal in value and quality to importations, but by using the building materials of the locality for which he designed he was able to preserve a continuity of the distinctive style of the district, it being beyond question that material had a most important bearing on architectural design.

MANCHESTER SOCIETY OF ARCHITECTS.—A number of suggestions as to the way in which Manchester, from an architectural point of view, might be made a more presentable city were offered by Mr. J. H. Woodhouse, the President of the Manchester Society of Architects, at a meeting of the Society in the Chartered Accountants' Rooms on Thursday last week, in the course of his presidential address. He drew attention to the fact that the Corporation had under consideration the publication of a combined catalogue of the whole of the architectural books in the various libraries of the city, which were available for either loan or reference. That, he said, was the result of a suggestion by Professor Capper, and would be welcomed and greatly appreciated by all members of their Society. If a taste for good architecture could be formed in the minds of the majority of the citizens, then possibly the ruling authorities would be encouraged to give their consideration to all that tended to improve our environment. In the matter of environment it had always been a cause of considerable annoyance to him to note that, after the authorities had spent thousands of pounds in street improvements, it should be within the power of the landowner to erect his building thereon with just so little consideration for architectural treatment, and no more, as would enable him to secure a desirable tenant, or it might be that the principal object he had in view was to catch the eye of the passer-by. In that he was too often successful in inflicting on a man of taste a severe shock by the vulgarity and lack of refinement of the building. Our principal thoroughfares in country as well as in town were terribly robbed of any charms they might possess by the necessity of the present overhead system of tram traction. While not expressing an opinion on the various methods of electric traction, he would say that those towns where other methods had been adopted had artistically done a wise thing. It would be a pleasure to many to learn that the small plot of land in Victoria-street, at the bottom of Cateaton-street, had been retained as an open space. There would then be secured to the public an interest in the old Hanging Bridge, and a valuable view of the cathedral from the lower end of Deansgate would be retained. A matter which affected the community at large was the strong trend of the present-day practitioner towards erecting our city buildings in permanent coloured materials. Was it too much to hope that the neglect of and indifference to the advantages of colour in the external treatment of our buildings by some of our practising architects would soon be a thing of the past? He suggested, in order to secure for the benefit of the citizen a higher ideal in the artistic treatment of the city, that a small qualified advisory committee should be appointed, to whom should be referred all matters of an artistic character.—*Manchester Guardian.*

Fifty Years Ago.

FROM THE *Builder* OF OCTOBER 20, 1855.

LONDON DRAINAGE OF THE PERIOD.

THE evidence of connexion between the well-water and the loss of life seems so conclusive as scarcely to admit a doubt; and the question that at once arises is, what was the position of the well and the condition of the water? On this point we have the report of a practical man, and well-known inhabitant of the parish, Mr. Jeht. York.

What do we find? The well adjoins the vault of No. 40, Broad-street; through this vault proceeded the main drain of the house, constructed on the old plan of a flat bottom, 12 in. wide, with brick sides, about 12 in. high, and covered with old stone. There was a deposit of soil about 2 in. thick in the drain, and on clearing this away the whole was found to be in the condition of a sieve, through which the house-drainage must have percolated a considerable time. In the front area there was a common open convenience, with a cesspool 3 ft. deep, *intended for a trap*, but misconstructed, and fully charged with soil. "Upon removing the soil, the brickwork of the cesspool was found to be in the same decayed condition as the drain, and which may be better comprehended by stating that the bricks were easily lifted from their beds without any the least force; so that any fluid could readily pass through the work, or, as was the case when first opened, over the top course of bricks of the trap into the earth, or made ground immediately under and adjoining the end wall eastward, this surface-drainage being caused by the accumulation of soil in, and the misconstruction of, the cesspool, which was intended to prevent effluvia and vermin coming into the house from the main sewer in the street, but which, in fact, it facilitated rather than prevented." And its effect was to force the deleterious fluid-matter into the parish well adjoining, by preventing it from running direct into the current of the house drain. To place the matter beyond a doubt, Mr. York had two spaces of the brick steining, 2 sq. ft. each, taken out, and the ground dug out between the cesspool and the well, when its black, saturated, and swampy condition, clearly demonstrated the fact.

Without reference to the assertion that matter from a choleraic patient who early died in the house thus found its way into the well, or the theory which this would materially strengthen, we have here a state of things prejudicial to health in the highest degree, and which, nevertheless, may be paralleled, we do not hesitate to say, in hundreds of places in the Metropolis. Shall we not take warning from past events?

Illustrations.

SCULPTURE RELIEF: "MINING."

THIS vigorous design in sculptural relief occupied a prominent place on the wall of the Lecture-Room at the last Academy Exhibition.

The panel represents the interior of a gallery in a mine, and is one of a series of panels which are to be placed on the staircase leading to the Ball room in the Grosvenor Restaurant at Glasgow.

Mr. Albert H. Hodge is the sculptor. Another of the panels of the same series, entitled "Science and Art," is illustrated in our issue of September 24, 1904.

MEMORIAL TO THE LATE H. A. HUNT.

THIS is a memorial to the late Mr. H. A. Hunt, the eminent surveyor, designed and modelled by Mr. F. E. E. Schenck, who sends us the following notes on his work:—

"The design of this memorial is in the style of the French XVIth century, and illustrates the chief interests in the life of the late Mr. Hunt. In the centre is a medallion portrait; his great interest in the Church is symbolised by the cross in gold, and the patron saint of his particular church (St. Margaret) in the niche above.

The two spandrils in low relief illustrate, on the left, teaching, and on the right, his profession, surveying. The seated figure below in high relief represents literature, thus symbolising his great interest in education. The two coats of arms in colour are those of Mr. Hunt and the City of Westminster. The insignia of the Freemasons denote his connexion with that order.

The figures are in bronze, and the frame is in oak, and has been placed in the board-room of the Westminster School, 53, Palace-street."

We may observe that Mr. Schenck has taken what we think is in nearly all cases the best course in a personal monument—he has avoided the æsthetic difficulty of the realistic figure in modern dress, which has been a stumbling-block to so many sculptors; and confined the portraiture to a head only in a medallion, filling up the remainder of the sculpturesque design with symbolical figures and emblems.

WORKS BY MR. R. S. LORIMER, A.R.S.A.

THE illustration is from a series of photographs sent to us by Mr. Lorimer, four of which refer to one work, "Pit-Kerro," an old house recently altered and to some extent restored.

The illustration lettered "A" shows the Entrance Lodge, Pit-Kerro. "B" is the view of the house from the garden. "C" is the door to the chapel. "E" is the Pit-Kerro old tower as restored.

"D" is the South African War Memorial erected at Alloa.

The "A.R.I.B.A." after the architect's name on the plate is correct, but we should also have added "A.R.S.A.," Mr. Lorimer being an Associate of the Royal Scottish Academy.

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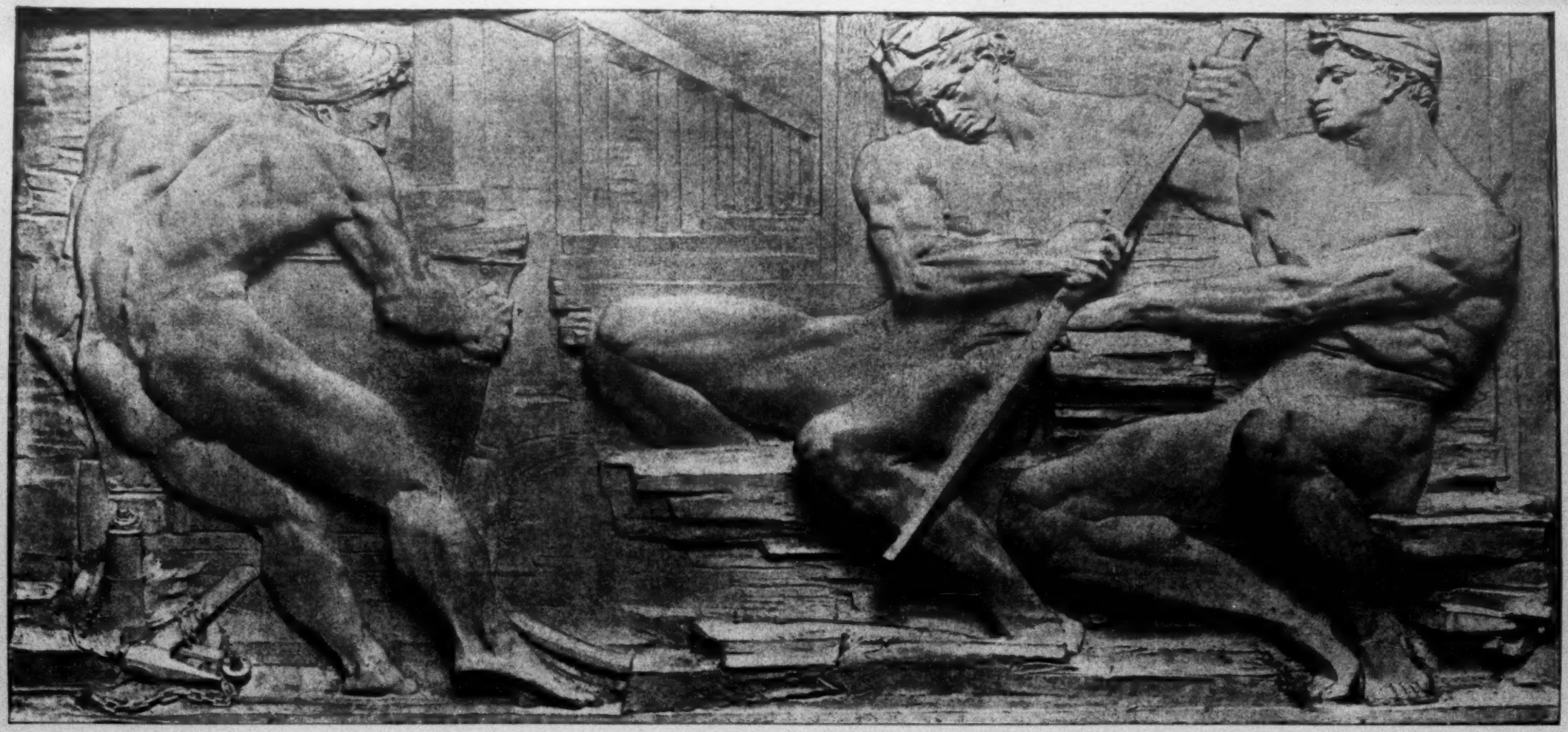


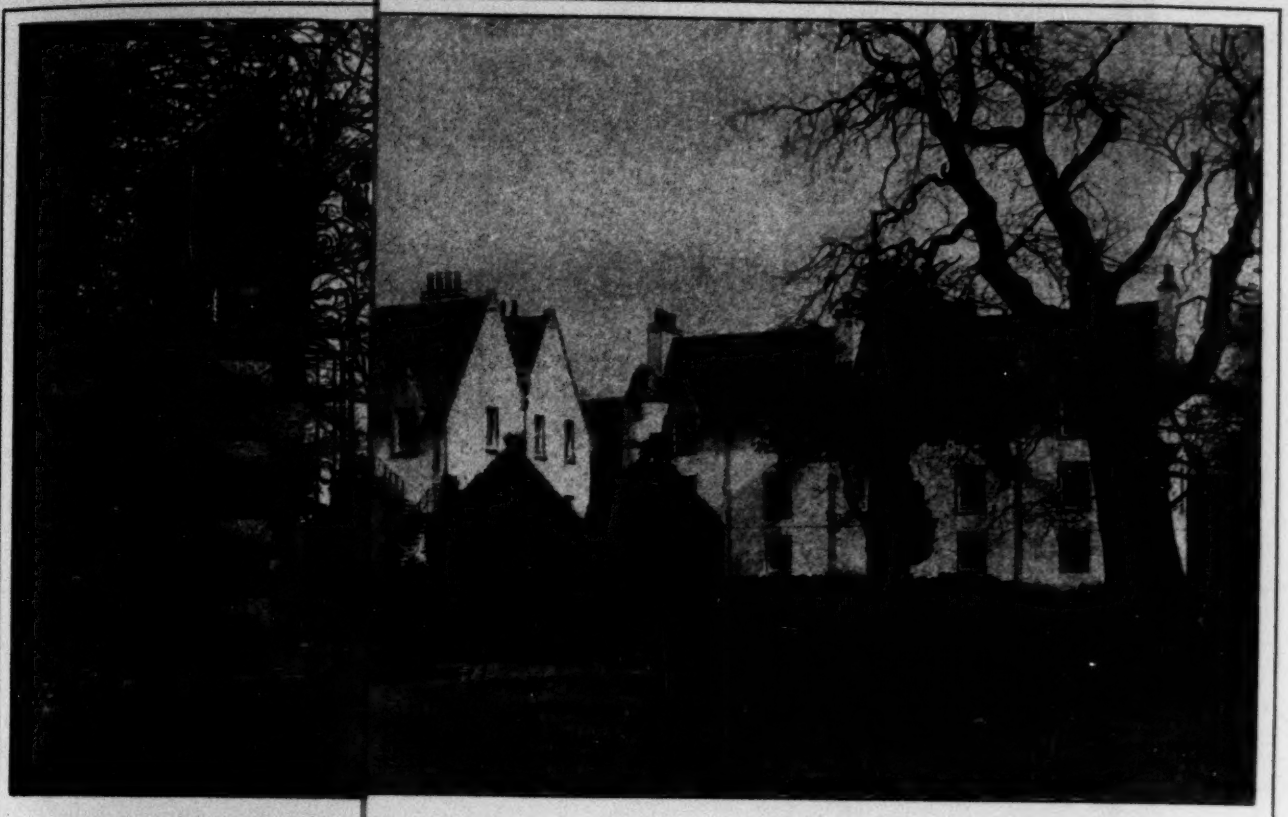
"INR. PHOTO" SPRAGUE & C°. L.TD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

SCULPTURE RELIEF: "MINING."—Mr. Albert H. Hodge, Sculptor.

INK PHOTO SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

MEMORIAL TO THE LATE H. A. HUNT, F.S.I.—Mr. F. E. E. Schenck, Sculptor.

SCULPTURE RELIEF: "MINING."—Mr. Albert H. Hodge, Sculptor.



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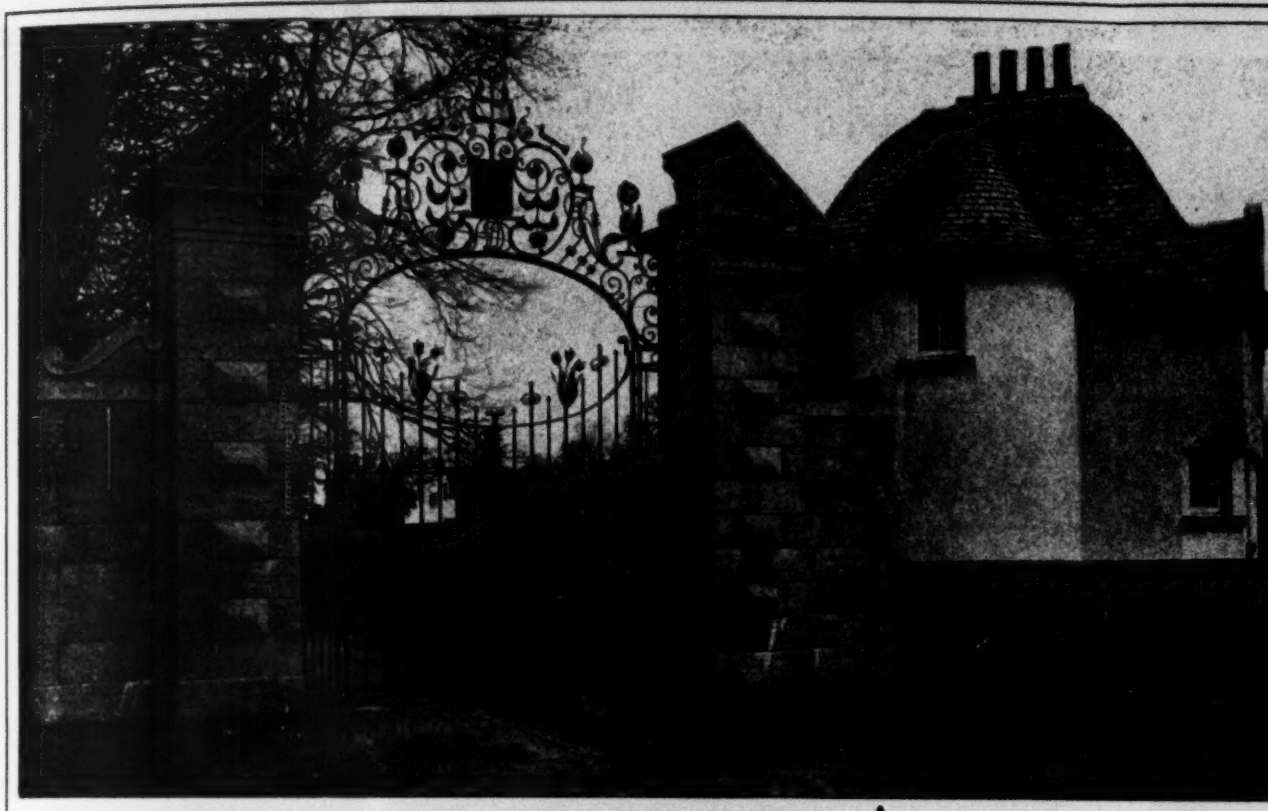
"INK-PHOTO," SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



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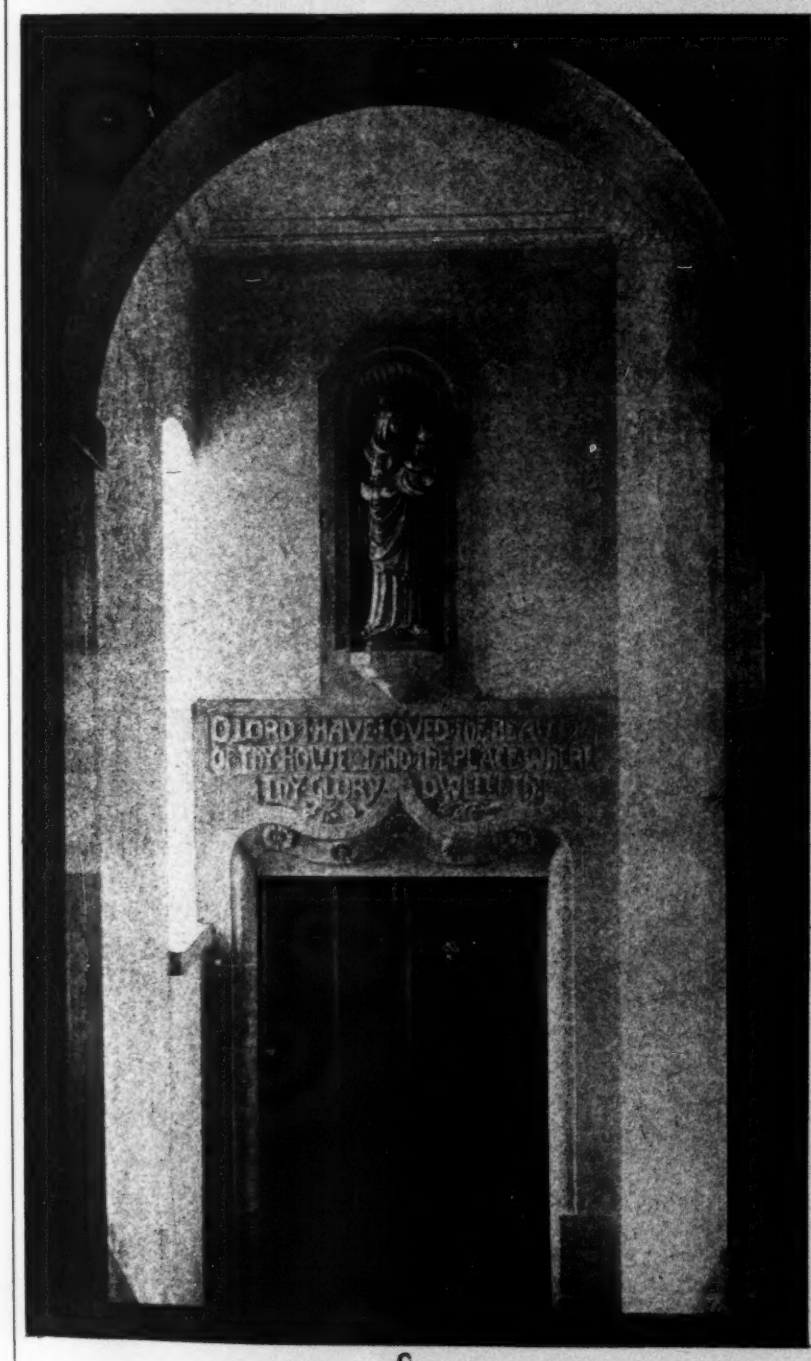
O LORD I HAVE LOVED THE HABITATION
OF THY HOUSE AND THE PLACE WHERE
THY GLORY DWELLETH

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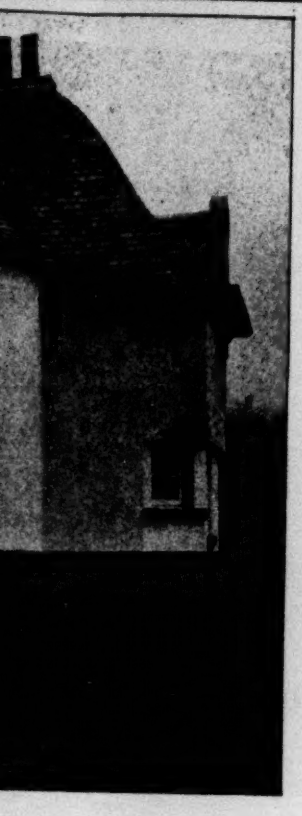

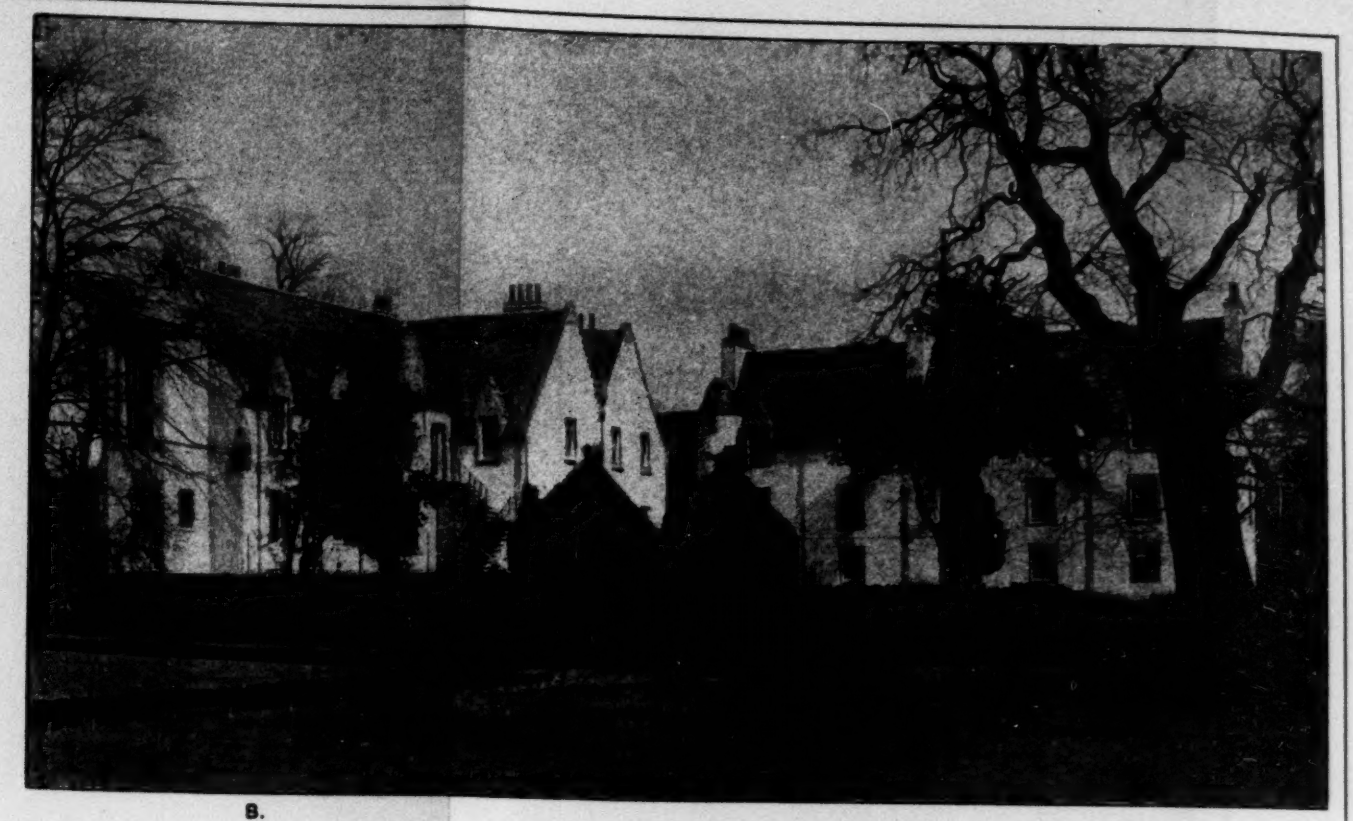

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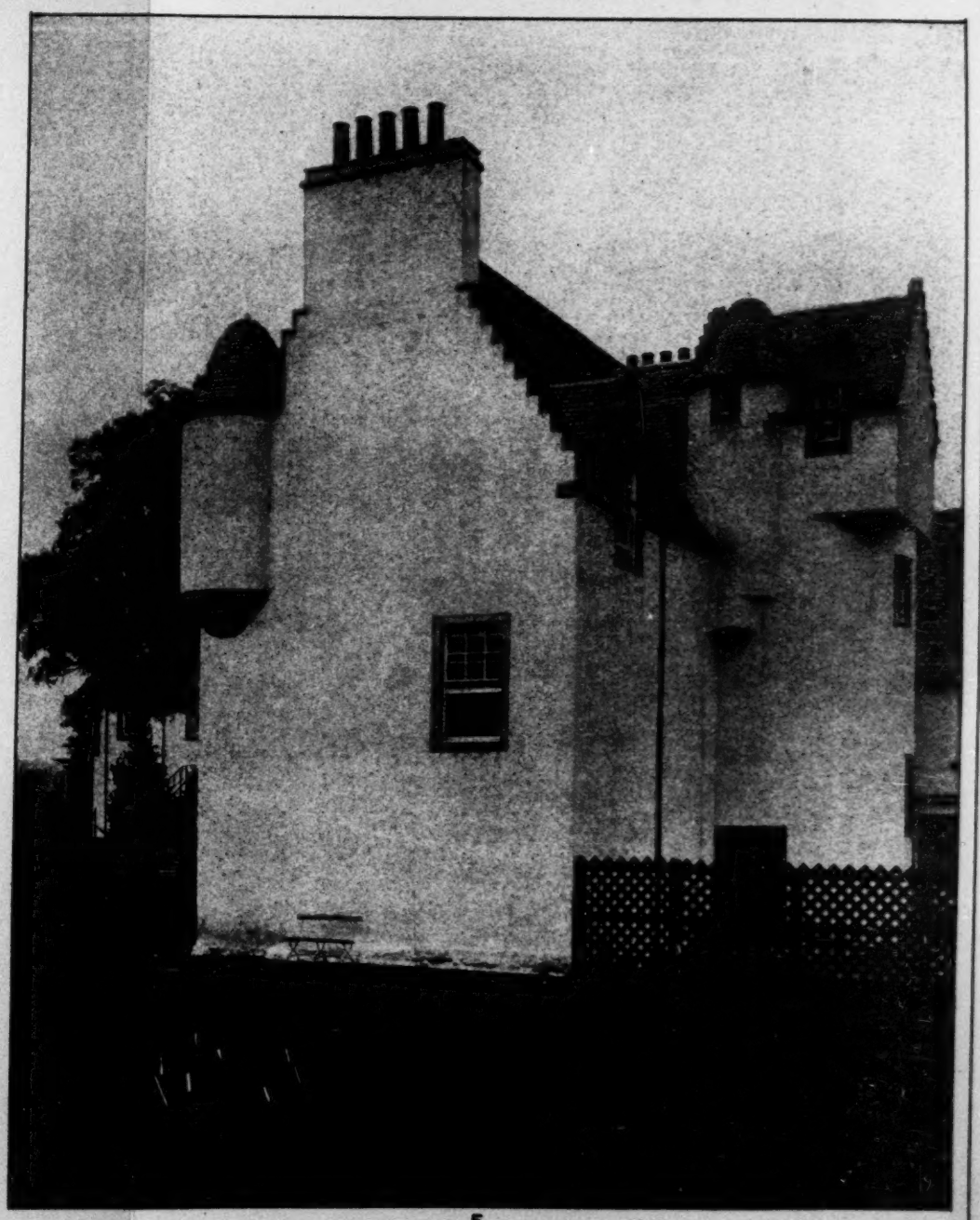

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"INK-PHOTO," SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

WORKS BY Mr. R. S. LORIMER, A.R.I.B.A.

DESIGN FOR ST. MARTIN'S CHURCH, W

EXTERIO

"INK-PHOTO," SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

TIN'S CHURCH, WORCESTER.—Mr. G. H. Fellowes Prynne, F.R.I.B.A., Architect.

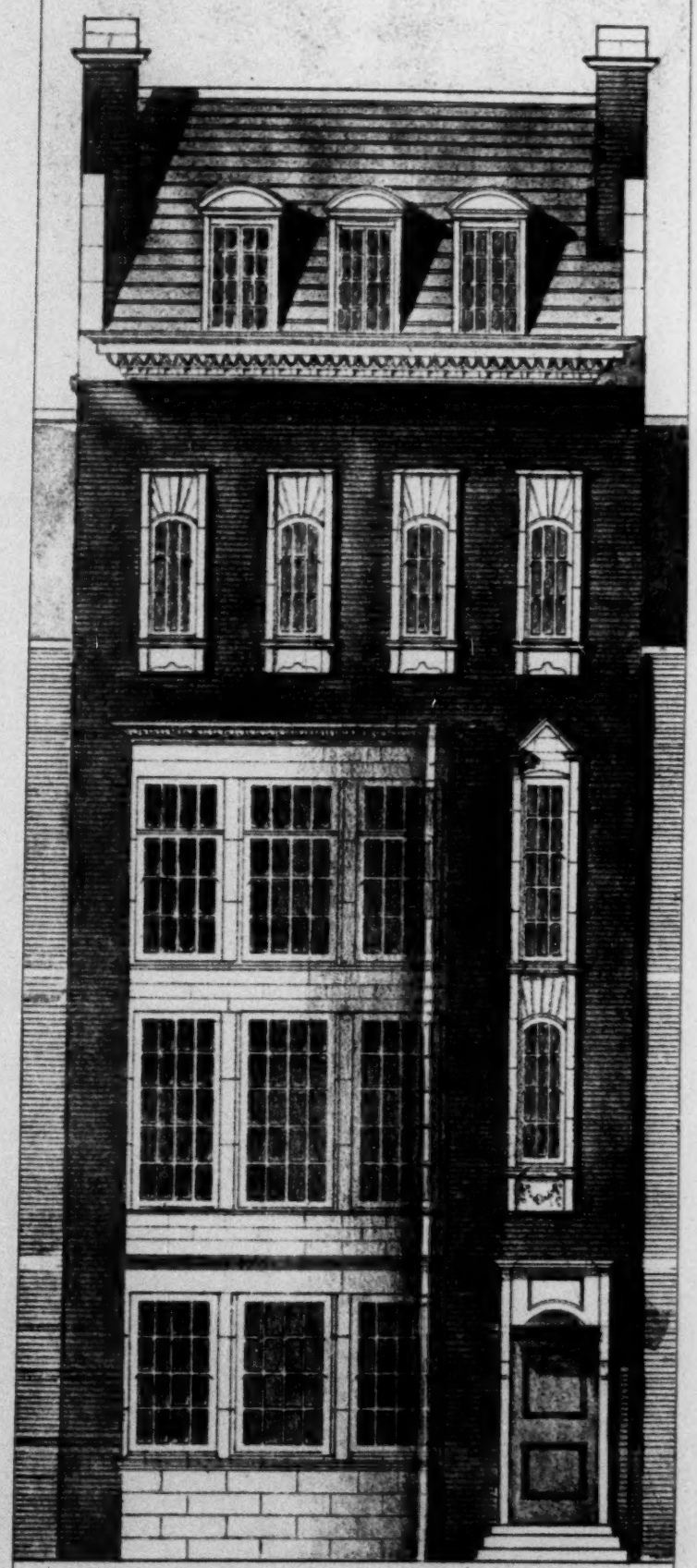
EXTERIOR VIEW FROM SOUTH-EAST.

PROPOSED SHOPS IN A PROVINCIAL TOWN.

Mr. Thallon
ARCHITECT
6 DALE STREET
LIVERPOOL. 1905

"INA-PHOTO" SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

No 68, SLOANE STREET.



Drawn at Salt
Edwin Wilkins
4/05

INK-PHOTO, SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

Mr. Lorimer sends us the following notes on the work:—

"PIT-KERRO, FORFARSHIRE.

The original house of Pit-Kerro consisted of an oblong, with stair turret at the back, as shown restored at E. About seventy years ago the house was brought into line with the taste of the period by having the steep roofs and upper part of the angle turrets demolished.

The house was then covered with a low-pitched roof, with the upper windows below the wall head. The floor levels were also tampered with. The pediments of the original dormer windows were found broken up and built into the modern wall head.

A few years ago this roof was removed and the walls taken down to about the level of the corbelling of the turrets. The upper portion was then built, and the house otherwise added to, as shown.

The chapel, the door of which is shown in the illustration 'C,' is approached from the ground floor corridor. Advantage was taken of a fall in the ground to sink the chapel floor some 5 ft., thus gaining considerable height in the ceiling. The figure over the door is of wood, painted and gilded, and was executed by Messrs. Clow, of Edinburgh.

'A' shows the new entrance lodge, etc., at Pit-Kerro. The ironwork was made by Mr. Thomas Hadden, of Edinburgh.

SOUTH AFRICAN WAR MEMORIAL, ALLOA.

'D' shows a war memorial recently erected at Alloa. The group was modelled and carved by Mr. Birnie-Rhind, R.S.A., and the whole monument executed in Prudham stone."

ST. MARTIN'S CHURCH, WORCESTER.

THE illustration shows the exterior view from the south-east of the proposed new Church of St. Martin's, Worcester. The main object of the design has been to get a lofty and effective building that would accommodate about 900 adults at a very reasonable cost, and to trust to the general grouping and proportion, rather than to detail, for effect.

The general form of the plan is a nave, 93 ft. long by 31 ft. wide, divided into five bays.* Broad processional passages are placed on either side, leading into the north and south transepts, that on the south side terminating into an apsidal-ended chapel. A broad stone staircase leads from the north aisle of the chancel into the basement, where, taking advantage of a fall in the ground, extensive clergy and choir vestries and a large parish room have been formed underneath the chancel. The organ-chamber is placed on the north side, and a good-sized sacristy is provided conveniently close to the chancel.

The baptistry is at the west end of the nave, and is flanked on either side by a porch, over the whole of which is formed a small western gallery, which extends the whole width of the nave, and to which access is gained by two turret staircases, one on either side. Externally these turrets are carried up the whole height of the building.

The chancel is 42 ft. long by 27 ft. wide, with an altar raised nine steps from the nave floor level.

The roof, which is carried at one level throughout the nave and chancel, is of barrel form, with the addition of a coved cornice for future decoration.

One of the main features of the design is the tower, which is placed almost centrally on the south side of the church, the principal entrance being formed in the base.

The materials intended to be used are hammer-dressed local stone facing, laid in random courses externally, and local red stone facings internally, the dressings being of Doulting stone.

GEO. H. FELLOWES PRYNNE.

SHOPS IN A PROVINCIAL TOWN.

THIS drawing, which was hung in the Royal Academy Exhibition of this year, shows a perspective view of two shops which are to be erected in a provincial town upon the repossession by the owner of certain leases about to expire.

The architect's aim has been to meet the demands of modern shopkeepers for extensive window space by such constructional methods as should express themselves, and should impart a simplicity and directness to the treatment of the design.

Increased area of shop front is gained by the introduction of bays, which also lend themselves to the grouping of the several classes of goods offered for sale in more effective display than is commonly attained by the haphazard commingling of various descriptions of articles behind a single sheet of glass in one plane.

The stonework is to be Portland stone, the woodwork teak, and the windows filled in with lead glazing, in teak-wood and wrought-iron frames, excepting the shop front, which is to be filled in with plate-glass, in teak-wood framing.

Spaces are arranged in the construction of the building for notifying the names and businesses of the shopkeepers, to be formed in mosaic; and these panels, it is hoped, will impart a decorative effect to the construction of the building, and take the place of the more usual signboard after-thoughts.

The floors and roof are to be formed with steel joists and concrete, the former covered with wood-block paving, and the latter with vulcanite.

The estimated cost of the building is 3,514*l*.

T. MYDDELTON SHALLCROSS.

DESIGN FOR HOUSE, No. 68, SLOANE-STREET.

THIS design, by Mr. E. W. Filkins, which was exhibited at the last Royal Academy, shows the front of an intended rebuilding of a house as No. 68, Sloane-street. The plans were all made, at an estimated cost of 7,000*l*.; but owing to legal difficulties the scheme fell through.

The elevation was to be in red brick with Portland stone dressings, the roof being covered with green Westmorland slates.

The front is a pleasing piece of simple street architecture, not without a character of its own.

COMPETITION.

DRILL HALL, BURY, LANCS.—In the recent competition among architects for the erection of a new drill hall at Bury the following awards have been made, viz.:—First premium, Mr. A. Hopkinson, Bury; second, Mr. G. H. Willoughby, F.R.I.B.A., Manchester. The estimated outlay will be about 10,000*l*.

Books.

Waverley Abbey. By HAROLD BRAKSPEAR, F.S.A. (Guildford: The Surrey Archæological Society. 1905.)

THIS most interesting and valuable contribution to our knowledge of the planning and arrangement of a Cistercian monastery is the outcome of four years' patient digging and measuring, and interspersed among the pages of descriptive notes are a large number of photographs and plans. A complete plan of the whole of the buildings of the monastery, so far as any traces have been found, coloured to show the differences in date of the various parts, is inserted in a pocket at the end of the book, and is in itself a sufficient proof of the amount of care, time, and labour that has been expended upon this work of exploration. The beautiful situation, and the picturesque ruins situated near the bank of the Wey a few miles south of Farnham, were known to many. It was not, however, until 1898 that steps were taken, with the kind co-operation of the owner of the land, to endeavour to trace the foundations of the church and monastery. This particular establishment derives a special interest from the fact that it was the first monastery of the Cistercian order built in England, an order that was subsequently to build some of the finest monastic churches in the country. The first church at Waverley, the foundations of which Mr. Brakspear has unearthed, was a building of the simplest possible character, a long and narrow nave, without aisles, a shallow presbytery, and transepts with a single chapel in each arm. A portion of the nave was occupied by the choir stalls and pulpitum. Surrounding the cloister (on the south side of the church) were the usual conventual buildings, the frater having been apparently, in the first instance, parallel with the church, as it was at Cleeve Abbey, in Somersetshire, when rebuilt in the Perpendicular period. In later years, the frater followed the almost universal arrangement and position of the Cistercian plan, and was placed at right angles with the church and with the cloister walk, from which it was approached.

In 1203 a new church was begun, and records in the "Annals of Waverley" have fortunately preserved details of the progress of the works. To enable the early church to be used for service until its grander successor was sufficiently advanced for consecration, the foundations of the new church were laid sufficiently far north and east to clear it almost entirely. The north wall of the old nave was to become the south wall of the new nave, or rather its aisle, and the only alteration necessary to the old church was a shortening of its presbytery, for the chapels, three in number, of the new south transept. This interesting example of enlargement is shown by Mr. Brakspear in a plan on page 22. In 1278 the new church "was hallowed in honour of the glorious Virgin Mary, Mother of God, by Dan Nicholas, of Ely, Bishop of Winchester." Hardly less interesting, and considerably more complicated, are the various alterations and additions that were made in the conventual buildings surrounding the cloister, and in other parts of the monastery within the precinct. All are carefully described by Mr. Brakspear, and we must refer our readers to his interesting descriptions and plans. The gable of the dorter still stands overlooking the Wey, and the vaulted Lay Brothers frater is still fairly perfect, and has an elegant vaulted roof. There is but little else now visible above ground, and the excavated portions have had to be filled in again. Excellent photographs, however, are given of the chief portions discovered, and these, together with the plans, and the very clear and concise descriptions will give the intending visitor a good idea of the former extent of the buildings, and also form a book of very considerable and permanent value to all interested in the preservation of a record of the planning of our monastic institutions.

Southwark: The Cathedral and See. By GEORGE WORLEY. (London: Geo. Bell & Sons. 1905.)

THE new diocese of Southwark, having been formed out of portions of the existing dioceses of Rochester and Winchester, the fine Church of St. Saviour's, on the Surrey side of London Bridge, is now added to the list of our English cathedrals, and is the subject of the latest addition to Messrs. Bell's series. In 1540 the Priory, to which the church was attached, was dissolved, and in 1614 "the church was purchased . . . from James I. for the sum of 800*l*." The building was after this apparently allowed to get into a bad state of repair. The vaulted stone roof of the nave had already fallen in the second half of the XVth century, and had been replaced by one in oak. The Lady chapel had become a bakehouse, and, subsequently, a stable. Galleries were erected in the beginning of the XVIIth century. In 1838 the nave, or what remained of it, was taken down and rebuilt in brick, and this hideous structure remained until 1889, when it was removed to make way for the restoration of the nave by Sir Arthur Blomfield, the foundation-stone being laid by the Prince of Wales in July, 1890, and the building completed within seven years.

The details and points of interest have all been fully considered and described in the letterpress, an excellent ground-plan is given of the building, and numerous photographs of the building as it is, and reproductions of old engravings. In the foundations of the original nave, a plan of which was published in the *Builder*, April 11, 1891, the second pair of columns from the west are shown considerably larger than the others. The new nave has its columns of equal diameter, but the remainder of the new work has followed the lines of the old work as closely as was possible. Among the interesting illustrations are photographs of the wooden bosses from the old nave (now in the north transept), and of the arms of Cardinal Beaufort in the south transept.

* A plan was sent to us by the architect, but too late for publication.

Cassell's Building Construction; comprising notes on materials, processes, principles, and practice. By Professor HENRY ADAMS, M.Inst.C.E. (London: Cassell & Co.)

MESSRS. CASSELL & Co. deal, as a rule, rather with popular than with scientific publications; but the name of Mr. Henry Adams as the author of this serial publication seems a guarantee that it is intended to be a work of scientific value; though, from the opening paragraph in which building construction is referred to as "a subject of universal interest," one may conclude that it is intended also for the general reader.

In the introductory notes it is pointed out that in the diagrams that will be used in the series a special form of sectional shading has been adopted and is to be adhered to, for each material presented: key specimens are given. This is a good idea, but not quite complete; it would surely have been possible to have invented two separate shadings for two such different materials as "brass and brickwork," and two separate ones for "steel and stone," instead of making one shading serve for both. This may be thought a trifling matter; only, when the system was adopted, why not make it complete? Professor Adams suggests that diagrams are more useful than small models in building construction classes; models to a small scale, he says, "show no more than a diagram can show, and are generally incorrect in some particulars, especially in the fastenings." This is quite true (the latter remark especially), yet we think they are of value as supplementary to diagrams, in enabling a student more fully to grasp the actual relation of parts.

The publication is in small "Parts," at 3d. each; we are not informed in how many Parts it is to be completed, a statement which should be (and generally is) given at the outset of a serial publication. The present portion deals in a very practical manner with the subject of "Timber used in building construction"; giving shipping marks, methods of conversion, directions for selection, diagrams of the most usual and important kinds of defect, and a great deal of other important rudimentary information stated with practical brevity and clearness. This is followed by a chapter, on the same plan, on "Iron and Steel used in building construction."

So far as one can judge from a single issue this seems likely to be a useful practical publication issued at a very low price. When it is complete we may have more to say of it.

Odd Time Tables. By H. W. ANDRAS, F.I.A., Actuary to the Provident Life Office. (London: C. & E. Layton.)

THESE tables show the number of odd weeks and days from any date to the next quarter-day, and the proportion of yearly amounts for the odd time. The tables are two, one for weeks and one for days, giving the proportional fractional of small sums per year, beginning at 6d. and ending at 100*l.* Decimals of pence are given. The amounts are said to be "calculated by C. & E. Layton's improved arithmometer," but we presume that Mr. Andras's name and position count for part of the claim on the reader's confidence. The tables are likely to be very useful to those who have to deal largely in payments for odd periods, and are also useful for calculating insurance premiums.

BOOK RECEIVED.

GARDEN CITY AND AGRICULTURE. By Thomas Adams. (Simpkin, Marshall, & Co. 1s.)

COMPENSATION AWARD, CHARING CROSS-ROAD, W.C.—As umpire in the case of "the Marquis of Salisbury *v.* the Charing Cross, Euston, and Hampstead Railway Company," Mr. E. H. Bousfield (of Messrs. Edwin Fox & Bousfield) has made an award of 11,070*l.* in respect of a compulsory sale of Nos. 42-4-6, Charing Cross-road, for a station of the new tube railway near Cranbourn-street. The valuations ranged from about 7,300*l.* to 15,000*l.*, and Mr. B. I'Anson Breach and Mr. L. R. Vigers acted as arbitrators for the claimant and the company respectively. Mr. Pilditch, surveyor to Lord Salisbury's property in London, Mr. James Green, and Mr. Rowden acted as experts for the claimant.

TRADE CATALOGUES.

THE Leeds Fireclay Company send us a handsome album showing views of the interiors in Messrs. Waterhouse & Sons' large and well-known building for the Prudential Assurance Company in Holborn. The Burmantofts faïence appears to have been used almost throughout the interior of this large building; and the series of photographs show how it can be used both for a permanent and washable interior decoration, and for forming a clean and bright lining to such situations as corridors, stairs, engine-rooms, etc. We are not sure that this is not its most valuable application, for the facility for producing elaborate architectural ornament in this material has been carried, in this as in other instances, rather too far; while to obtain a permanent and durable clean wall-surface in a room for practical purposes (with some massing of plain colour if desired) is an advantage of which no one can have any doubt. The album is, however, an interesting souvenir of what is in many ways a remarkable building, and the photographs convey the idea that the work has been carried out in a most careful and finished manner.

We have received from Falk, Stadelmann, & Co., of Farringdon-road, London, a catalogue of the "Aureola" Luminous Electrical Radiators. The special feature of these radiators is the highly-burnished copper reflector. This reflector is easily kept bright and clean by means of a dry cloth. The large radiators have two switches, so that the heat can be regulated. Where electric power can be had cheaply this method of heating can be advantageously employed. The freedom from dust has a distinct hygienic value, and the decorations and furniture keep clean much longer than when coal fires are used.

We have received from A. P. Lundberg, of Liverpool-road, London, a catalogue of electrical accessories. The catalogue is a most interesting one, as many novelties are described. A clear description is given of the system of intermediate wiring, and the proper method of installing it is pointed out. The duplex tumbler switch for controlling a two-filament lamp, or for changing over to another circuit, should prove useful. We can recommend the catalogue to all interested in house wiring.

Messrs. John Bryden & Sons send us a neat little catalogue in which particulars and prices are given of dinner service, luggage, and goods lifts of simple design for hand operation. The writer of this price list has not attempted to turn it into a scientific treatise of persuasive character. On the contrary, he has stuck closely to business, and gives nothing more than the practical details which are likely to be appreciated by busy professional men and intending purchasers.

Correspondence.

THE CHEAP COTTAGE.

SIR,—There has been of late a very considerable amount of both correspondence and review on the subject of workmen's cottages, and especially on the so-called "cheap" 150*l.* kind; but to infer, as some have done, that architects have not keenly studied the subject before is quite at variance with the evidence of the many drawings and descriptions published in the professional journals during the last forty years. The old axiom that what costs nothing is worth nothing is true of this matter as of many others, and "cheap" things as a rule are generally "nasty," more or less. There is very little novelty in either the plans or elevations of those at Letchworth, excellent though many of them undoubtedly are, and it is to be hoped that the scheme which has produced them may pave the way not only for further development, but also for an arrival at some tangible agreement with local governing bodies, which seem to block the way at present to what has become an urgent public necessity. This difficulty seems to be non-existent at Letchworth.

The limit of 150*l.* is indeed low if available anywhere and everywhere, which does not thus far appear to be proven. In my own experience that amount has been quoted as a constant in a neighbourhood where cost of bricks, haulage, etc., makes it an impossibility, and in simple equity this should be borne in mind. What can be easily done in one place cannot be so easily done, or indeed be done at all, in any place. Experience is a factor that cannot be overlooked, and the fact that so few names of our best men are concerned about it goes to show that no one is prepared to attempt to work miracles in the matter. Surely the truly cheap cottage is one that is convenient and comfortable to live in, wind and water proof, pleasing without being pretentious, and its cost of upkeep as small as possible consistently with fair usage, to which should be added due consideration of aspect and prospect and jealous care and foresight over little things.

Sacrifice must be made somewhere if the return to and retention of the farm labourer on the land is ever to be brought about. This is well worthy the efforts of the profession, and I do not think they are unmindful of it or, under reasonable conditions, either unable or unwilling to cope with it.

I fail to see a reason for whitewashing a brick building externally; it cannot make it warmer, drier, more beautiful, more durable, or more truthful, and must occasionally require to be done again, and that costs money.

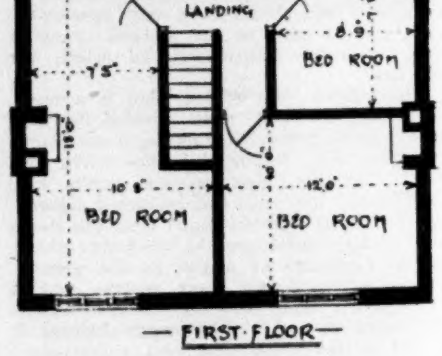
E. SWINFEN HARRIS, F.R.I.B.A.

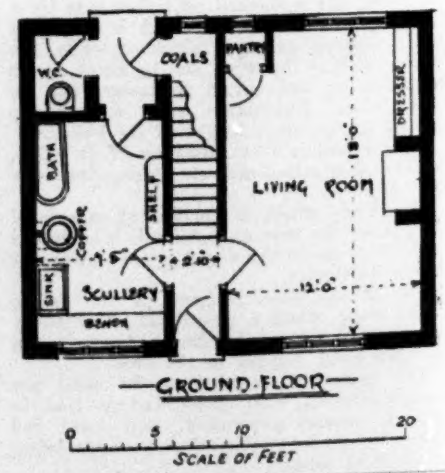
GARDEN CITY PRIZE COTTAGE.

SIR,—With reference to the successful design for the 150*l.* cottage for the above, published in your issue of the 23rd ult., I venture to think that this excellent design could be improved and made still more valuable, and I take the liberty of enclosing herewith a sketch plan showing my suggestions. These you will notice consist of the following:—

The lobby leading into the living-room is dispensed with, and the entrance to the cottage is arranged in the orthodox way;

The pantry or larder is placed in the living-room, as I consider it would be more convenient than in the scullery;





A portable copper is shown in place of the brick-seated one, with the flue for same corbelled out at a height of say 5 ft. or 6 ft. This provides room for a bath in the scullery, and, as the copper and sink are both adjacent, hot and cold water could be put into the bath by means of a pail.

The rearrangement of the plan curtails the largest of the three bedrooms slightly, but it is still a fairly large room, and the living-room is made into a more convenient room for all family purposes.

As the expense of the lobby is avoided, and straight stairs are used in place of winders, there would be a saving in these two items, which would pay for the bath, and therefore the cottage could be built at the same cost as in the original design.

I trust these suggestions may be of some value in helping forward a solution of this very important question. ERNEST FERRY.

HOVE LIBRARY COMPETITION.

SIR,—I am sure everyone connected with this competition is indebted to you for making public the peculiar and unsatisfactory turn events have taken in connexion with it.

It seems to me the assessor rather lost sight of the fact that there are degrees of excellence in these matters, and a competition of this size is not likely to attract the leaders of the profession. Among seventy competitors there must be some fair designs at least, to put it at the lowest estimate, and considering the amount of labour and expense (the latter must reach several hundreds of pounds) these designs represent, it does seem very hard and churlish to withhold the premiums.

Competitions very properly are the means amongst other things of bringing young members of the profession to the front, and their efforts in this case cannot surely be such utter rubbish as not to deserve some acknowledgment and encouragement. There was no onus on the Hove Corporation to *carry out* any of the designs, only to award the premiums.

The result is very unsatisfactory to the Hove Corporation, as after much time and expense has been given to the affair they have no designs they can appropriate. It also discredits the Institute in the eyes of the public. The Hove Corporation issued excellent conditions in accordance with the Institute regulations; so far as I know they did all they ought to do, and in a satisfactory manner. They have gone to the President himself for an award, and the upshot is the whole thing is a fiasco. I was reading the other day of a similar case.

Everyone admits the Institute has done a very great deal to improve competitions, and no one can reasonably object to their conducting them when placed in their hands in the way they think best. But I submit it is unreasonable and undesirable to render a competition null and void because the assessor happens to be at the tip-top of the profession (may I say, most deservedly so?), and does not think the designs are the very best that can be produced.

Considering the very singular and unprecedented nature of the award, surely the least that can be done is to provide each competitor with a copy of the assessor's report and to publicly exhibit the designs, as promised in the conditions. I trust Mr. Belcher will see his way to have this done; competitors look to him for assistance.

ANOTHER COMPETITOR.

AYLESBURY ELEMENTARY SCHOOLS COMPETITION.

SIR,—The letter in your last issue referring to the Aylesbury Schools Competition raises a point of great importance. When an assessor has been appointed by the President of the R.I.B.A., competitors ought at least to feel confident that the design selected will be the one which fulfils most closely the conditions laid down by the promoters. Unfortunately they cannot do so. The Aylesbury case is not an isolated one. The Rochester Technical Institute Competition was assessed in a similar manner. Surely it is the first duty of an assessor to see that the conditions of the competition are fulfilled in the design sent in, and, other things being equal, to give the preference to designs which show a reasonable prospect of being executed for the sum allowed.

The Institute Council must see that more care is exercised in the appointment of assessors, or bitter experience will soon teach promoters of competitions not to be so rash as to bind themselves to accept their awards.

ANOTHER A.R.I.B.A.

METROPOLITAN ASYLUMS BOARD.

THE usual fortnightly meeting of the managers of the Metropolitan Asylums District was held on Saturday last week at the offices of the Board, Victoria Embankment, E.C.

Southern Hospital.—Among the correspondence read was a letter from the Local Government Board with regard to a proposal to provide accommodation for coal and coke at the Southern Hospital at a cost of 850*l.*, stating that so elaborate a building should not be necessary. The letter was referred to the Works Committee.

The Local Government Board also wrote authorising the following works—Alterations and additions at Millfield; sewage works, Leavesden Asylum; provision of fire exits at South Western and Eastern Hospitals; and the resetting of boilers at the Park Hospital.

Belmont Asylum.—The Works Committee reported that Messrs. Bromley & Batstone had satisfactorily completed their contract for electric wiring, fire-alarms, etc., at this asylum, at a total cost of 2,383*l.* 2*s.* 1*d.*, the contract having been for 2,444*l.*, the extras including the wiring of the chapel, boiler-house, and laundry. The Committee submitted an estimate, arrived at by Messrs. Thomas Dinwiddy & Sons, of 200*l.* for the erection of a porter's lodge at the asylum.

Joyce Green Hospital.—Having failed to find a varnish capable of resisting sulphur fumes, the Committee reported that they had authorised the omission of the internal varnishing from the contract of Mr. W. J. Simms & Sons for cleaning and painting works at this hospital.

South Eastern Hospital.—The Committee reported having approved a plan, prepared by Messrs. T. W. Aldwinckle & Sons, for additional coal storage and a pump and heater room at this hospital. It was agreed to provide a tramroad for heavy traffic at the hospital, at a cost of 650*l.*

The Student's Column.

STEAM BOILERS AND PIPES.—XVI.

CHIMNEYS (*continued*).

IN the formulæ given last week we have a set of simple and convenient rules giving results that are approximately correct for chimneys connected with boiler flues of moderate length and used under almost any conditions, apart from those arising out of mismanagement of the boiler or faulty construction of the boiler setting and main flue.

Examination of formula (16) will show that in any given installation the only possible cause of variation in the theoretical velocity of the cold air and of the hot gases is to be found in differences of temperature. This is demonstrated by the cases stated below, where the values have been calculated from the densities given in Table XVIII.

(*a*) Reduction of the external temperature improves the draught if the internal temperature remains unaltered.

Example (15).—

Outer Air.	Chimney Gases.	$\left(\frac{D-d}{D}\right)$	$\sqrt{\frac{D-d}{D}}$	$\left(\frac{D}{d}\right)$
Deg. F.	Deg. F.			
62	600	0·507	0·712	2·022
32	600	0·535	0·731	2·158

(*b*) Reduction of the external temperature accompanied by reduction of the internal temperature impairs the draught unless the temperature of the atmosphere is reduced proportionately to that of the chimney gases.

Example (16).—

Outer Air.	Chimney Gases.	$\left(\frac{D-d}{D}\right)$	$\sqrt{\frac{D-d}{D}}$	$\left(\frac{D}{d}\right)$
Deg. F.	Deg. F.			
62	600	0·507	0·712	2·028
32	500	0·487	0·697	1·949

(*c*) Increase of the external temperature unaccompanied by increase of the internal temperature reduces the draught, but it must be remembered that in many establishments the demand for steam is far less in hot than in cold weather, and where this happens the reduction in the draught power is of comparatively little importance.

Example (17).—

Outer Air.	Chimney Gases.	$\left(\frac{D-d}{D}\right)$	$\sqrt{\frac{D-d}{D}}$	$\left(\frac{D}{d}\right)$
Deg. F.	Deg. F.			
62	600	0·507	0·712	2·028
92	600	0·479	0·692	1·918

As already pointed out, the effect of the variations caused by differences of temperature is still smaller upon the velocity of the hot gases in the chimney than upon the head.

Example (18).—Applying the figures in Example (16) to a chimney 100 ft. high, we have the following results by formulæ (9) and (23):—

Head in inches of water.

For 62 deg. and 600 deg.

$h_2 = 100\ (0{\cdot}507 \times 0{\cdot}01466) = 0{\cdot}743$ in.

For 32 deg. and 500 deg.

$h_2 = 100\ (0{\cdot}487 \times 0{\cdot}01466) = 0{\cdot}714$ in.

Theoretical velocity in feet per second.

For 62 deg. and 600 deg.

$v = 66{\cdot}1\ \sqrt{0{\cdot}743} \times (2{\cdot}028) = 115$ ft. per sec.

For 32 deg. and 500 deg.

$v = 66{\cdot}1\ \sqrt{0{\cdot}714} \times (1{\cdot}949) = 109$ ft. per sec.

As the actual velocities would be about one-fifth of these values, the difference is little more than 1 ft. per second, probably less than the differences of velocity that might be expected to result from daily variations of the atmospheric conditions.

From the foregoing examples it is clear that so far as ordinary working is concerned general rules such as formulæ (35) to (39) may safely be used for the design of chimneys. If the boiler flues are beyond the average length, or otherwise present more than the average resistance to the flow of the gases, special calculations should be made. The same course may also be followed when the flues are exceptionally short and present very little resistance to the flow of the gases.

The present is a suitable place to inquire into the effect of applying an economiser at the foot of a chimney, thereby reducing the internal temperature from, say, 600 deg. to 350 deg.

Example (19).—We will assume the economiser is to be applied to a chimney, 100 ft. high, connected with a boiler in which 900 lb. of coal are burned per hour. For the purpose of comparison, the practical velocities may be computed by formula (27), substituting therein the theoretical velocities for 600 deg. and 350 deg. as given in Table XXII.

Thus we get

For gases at 600 deg.

$v_a = 115{\cdot}8 \times 0{\cdot}2 = 23{\cdot}16$ ft. per sec.

For gases at 350 deg.

$v_a = 74 \times 0{\cdot}2 = 14{\cdot}8$ ft. per sec.

These figures show that the actual velocity is reduced by 8·36 ft. per second, but against this we have compensation from two distinct sources.

In the first place, the coal consumption should be considerably reduced. Let us take the saving at 20 per cent., leaving the net consumption at $900 \times (1 - 0{\cdot}2) = 720$ lb. per hour. This means that the air supply will be proportionately reduced. Taking the quantity at 24 lb. per pound of coal, we have only $(720 \times 24) = 17{,}280$ lb. per hour with the economiser, instead of $(900 \times 24) = 21{,}600$ lb. per hour without the economiser.

In the second place, the volume of the hot gases will be reduced with the temperature from 640 cubic ft. to 489 cubic ft. per pound of coal.

Consequently the total volume to be carried away by the chimney is $(728 \times 489) = 356{,}000$ cubic ft. per hour with the economiser, instead of $(900 \times 640) = 576{,}000$ cubic ft. per hour without the economiser, or 98 cubic ft. per second in one case and 160 cubic ft. per second in the other.

Assuming the internal diameter of the chimney to be 3 ft., with a corresponding area of, say, 7 sq. ft., the velocity actually required will be $(98 \div 7) = 14$ ft. per second or 0·8 ft. less than the velocity which we have already seen the chimney is capable of providing.

Without the economiser the required velocity is $(160 \div 7) = 22{\cdot}86$ ft. per second or 0·3 ft. less than that actually given by the chimney.

The net upshot of these figures is to show that, instead of reducing the efficiency of the chimney for carrying away the gases from the boiler, the application of the economiser may actually result in a slight improvement.

Of course, some extra friction is caused by the presence of the economiser in the main flue, but this is more than counterbalanced by the general reduction of friction through the whole chimney and flue system owing to the lower velocity of the gases.

We now see that for ordinary use sufficiently exact guidance is afforded by the four equations

(35) $A = \frac{C \times 0{\cdot}08}{\sqrt{H}}$ = area for a given coal consumption and chimney height.

(37) $H = \left(\frac{C \times 0{\cdot}08}{A}\right)^2$ = height for a given coal consumption and chimney area.

(38) $v_a = \frac{C \times 0{\cdot}18}{A}$ = velocity for a given coal consumption and chimney area.

(39) $C = \frac{A\ \sqrt{H}}{0{\cdot}08}$ = coal consumption for a given chimney area and height.

Table XXIV. has been calculated by these rules, and the following examples will show the convenience of the table to the architect or engineer who has to design new chimneys or to decide upon the suitability of existing chimneys for duties greater than those for which they were originally intended.

TABLE XXIV.—THE PROPORTIONS AND CAPACITY OF CHIMNEYS. TEMPERATURES OF THE HOT GASES AND OF THE EXTERNAL AIR 585 DEG. AND 62 DEG. F., THE LENGTH OF THE BOILER FLUES EQUAL TO THE HEIGHT OF THE CHIMNEY, AND THE AIR SUPPLY ABOUT 23 LB. PER POUND OF COAL.

Height of Chimney. $H = \left(\frac{C \times 0{\cdot}08}{A}\right)^2$	Practical Velocity. $v_s = \left(\frac{C \times 0{\cdot}18}{A}\right)$	Coal per sq. ft. of Area at Chimney Top. $C = \left(\frac{A\sqrt{H}}{0{\cdot}08}\right)$	Area of Chimney Top per lb. of Coal. $A = \left(\frac{C \times 0{\cdot}08}{\sqrt{H}}\right)$	$A_1 = \left(\frac{C \times 0{\cdot}08 \times 144}{\sqrt{H}}\right)$
ft.	ft. per sec.	lb. per hour.	sq. ft.	sq. in.
10	7·11	39·53	0·0253	3·643
15	8·64	48·40	0·0206	2·975
20	10·06	55·90	0·0178	2·576
25	11·25	62·50	0·0160	2·304
30	12·32	68·47	0·0146	2·103
35	13·31	73·96	0·0135	1·947
40	14·23	79·06	0·0126	1·821
45	15·09	83·86	0·0120	1·717
50	15·91	88·41	0·0113	1·629
55	16·68	92·70	0·0107	1·553
60	17·42	96·81	0·0103	1·487
65	18·13	100·78	0·0100	1·429
70	18·82	104·58	0·0095	1·377
75	19·48	108·25	0·0092	1·330
80	20·12	111·80	0·0090	1·288
85	20·74	115·24	0·0086	1·249
90	21·34	118·60	0·0084	1·214
95	21·93	121·83	0·0082	1·182
100	22·50	125·00	0·0080	1·152
105	23·04	128·01	0·0078	1·124
110	23·58	131·01	0·0076	1·094
115	24·12	134·02	0·0074	1·074
120	24·64	136·89	0·0073	1·053
125	25·15	139·76	0·0071	1·022
130	25·65	142·52	0·0070	1·010
135	26·10	145·14	0·0068	0·992
140	26·62	147·90	0·0067	0·973
145	27·09	150·51	0·0066	0·956
150	27·54	153·03	0·0065	0·941
155	27·90	155·50	0·0064	0·929
160	28·44	158·00	0·0063	0·911
165	28·89	160·52	0·0062	0·897
170	29·32	162·90	0·0061	0·884
175	29·74	165·25	0·0060	0·871
180	30·17	167·64	0·0059	0·859
185	30·60	170·02	0·0058	0·849
190	31·00	172·27	0·0058	0·836
195	31·41	174·52	0·0057	0·825
200	31·82	176·76	0·0056	0·814

Example (20).—A chimney is required for a Lancashire boiler, 24 ft. long by 7 ft. diameter, having a grate area of 30 sq. ft., and in which it is intended to burn 14 lb. of coal per hour per square foot of grate. The height of the chimney must not be less than 80 ft., this dimension being fixed by the by-laws of the local authorities in the district where the chimney is to be built. See if this height will be sufficient, and find the necessary area of the chimney.

The coal consumption is $(30 \times 14) = 420$ lb. per hour. As a trial the minimum height of 80 ft. may be taken to represent that of the chimney. Opposite 80 ft. in Table XXIV. we find in column 4 that each pound of coal consumed requires a chimney area of 0·009 sq. ft. Hence, to burn 420 lb. of coal per hour the area of a chimney 80 ft. high must be $(420 \times 0{\cdot}009) = 3{\cdot}78$ sq. ft. This being a suitable area for the height, the diameter of the chimney top will be $\sqrt{3{\cdot}78 \div 0{\cdot}7854} = 2{\cdot}2$ ft., say, 2 ft. 3 in.

Example (21).—Assume that three 24-ft. by 7-ft. Lancashire boilers are to be installed instead of one, as in the preceding example, and that two of these boilers will be in regular service at the same time.

Proceeding as before, we find the area for an 80 ft. chimney would be $(30 \times 14 \times 2) \times 0{\cdot}009 = 7{\cdot}56$ sq. ft. This area represents a diameter of $\sqrt{7{\cdot}56 \div 0{\cdot}7854} = 3{\cdot}1$ ft., say, 3 ft. 3 in.

If preferred, the chimney might be made 90 ft. high, the area would then be $(30 \times 14 \times 2) \times 0{\cdot}0084 = 7{\cdot}056$ sq. ft., and the diameter $\sqrt{7{\cdot}056 \times 0{\cdot}7854} = 3$ ft.

Example (22).—Required the possible coal consumption for a chimney 150 ft. high measuring 4 ft. square at the top.

By Table XXIV. each square foot of area is capable of carrying away the gases from 153·03 lb. of coal per hour, and, as the actual area is 16 sq. ft., the capacity of the chimney is $153{\cdot}03 \times 16 = 2{,}448$ lb. of coal per hour.

Example (23).—Required the velocity necessary to carry away the products of combustion from 600 lb. of coal per hour, the internal diameter of the chimney being 2 ft. 6 in. and the area 4·9 sq. ft.—say, 5 sq. ft.

The duty of each square foot of area is $(600 \div 5) = 120$ lb. This is very little less than the value of 121·83 in column 3 of Table XXIV., and the required velocity may be taken at 22 ft. per second. Under average working conditions this will be given by a chimney 95 ft. high, but in special cases the practical velocity should be calculated by formula (24).

Example (24).—An architect is commissioned to build a new wing for an infirmary, to increase the existing heating system by 2,000 sq. ft. of radiation surface, to increase the existing hot water supplies by 250 gals. per hour, and to provide for an electric light installation of 8,000 candle-power.

The existing boiler plant includes two 30-ft. by 7-ft. 6-in. Lancashire boilers, each having a grate area of 37·5 sq. ft., in which the coal consumption is about 14 lb. per square foot, and, as only one boiler is employed at a time, the total coal consumption is $(37{\cdot}5 \times 14) = 525$ lb. per hour. To provide sufficient steam for the new apparatus it is necessary to lay down a third boiler, so that two boilers may always be in operation.

The existing chimney is 100 ft. high, with an internal diameter at the top of 3 ft., the area being, say, 7 sq. ft. Examination of Table XXIV. shows that this chimney is capable of dealing with $(125 \times 7) = 875$ lb. of coal per hour. It has to be ascertained, however, whether it will suffice for the coal consumption necessitated by the further apparatus contemplated, in addition to the existing consumption.

Let us say that an approximate estimate gives 3,100 lb. as the quantity of steam required per hour for the new plant.

Then, taking the evaporative duty of the new boiler at 8 lb. of water per pound of coal, we have $(3{,}100 \div 8) = 387$ lb. of coal per hour, or, adding a margin of one-third for contingencies, say, 500 lb. of coal per hour.

Adding this to 525 lb. already burned per hour, the total consumption is 1,025 lb. per hour, or $(1{,}025 \div 7) = 146{\cdot}4$ lb. per square foot of chimney area.

Table XXIV. shows that the height of the chimney ought to be increased to a little more than 135 ft., and, if this should prove to be inadvisable for structural reasons, it will be necessary to have recourse to mechanical draught, in order to carry away the products of combustion when the boilers are working at their full capacity.

CHURCH OF ST. GEORGE, HORNSEY.—Mr. J. S. Alder has prepared the plans and designs of a new church in Priory-road, to contain 700 sittings, for the erection of which a fund has been opened.

GENERAL BUILDING NEWS.

ROMAN CATHOLIC CHURCH, ASHINGTON.—A new Roman Catholic church has just been opened at Ashington. It is situated on the main thoroughfare at the corner of Station-road and Park-road, and is a brick building with Gothic windows and chancel. The nave is 78 ft. long and 32 ft. in width, affording seating accommodation for 500 worshippers. It is provided with a side chapel and an organ loft, whilst a cloister 12 ft. wide and 33 ft. long connects the church with the presbytery. The carved oak altar in the Gothic style is the work of Messrs. Chas. Bayaert & Son, of Bruges, Belgium, the same firm supplying the font in blue stone. The statues are by Messrs. Mayer, of Munich, the installation of one of the new positive organs by Messrs. Bowran & Co., Newcastle, completing the building, a feature of which is the design of the couplings set on brackets which support the roof. Mr. Charles Walker, of Newcastle, is the architect, Messrs. R. & G. Brown, Amble, being the builders and contractors. The electric fittings have been installed by the Northern Electric Supply Co., the seating accommodation being by the North of England Furnishing Co., of Darlington. Three thousand pounds is the estimated cost of the church.

CATHOLIC CHURCH, MALVERN.—The Roman Catholic Bishop of Birmingham opened recently a church which has just been completed at Malvern by the Order of Benedictines, next to their monastery. It has been built according to the last designs prepared by the late Mr. Paul Peter Pugin, the work being carried out under the direction of Mr. Sebastian Pugin Powell. It cost about 7,000*l*. The church will accommodate about 300 people, and is dedicated to Our Lady and St. Edmond King and Martyr.

CHURCH, LYNDHURST-ROAD, HAMPSTEAD.—The Mayor of Hampstead opened at Lyndhurst-road recently the new church buildings which have been erected from the designs of Messrs. Spalding & Spalding by Messrs. J. Jarvis & Sons. The total sum required for the work is something over 10,000*l*.

CHURCH, CHINLEY, STOCKPORT.—On the 7th inst. the foundation-stone of the new church of St. John, at Whitehough, Chinley, was laid. Messrs. Huby & Cooper, Whaley Bridge, are the contractors, and Mr. C. W. Johnson the architect for the work.

CHURCH RESTORATION, HEADCORN.—The re-opening after restoration of the south chapel and ancient chantry in the old Parish Church at Headcorn and the dedication of a new stained-glass window in the nave took place a short time ago. The work was carried out under the supervision of Mr. Bodley, architect, by Messrs. Franlin, of Oxford.

ST. NICHOLAS, CARISBROOKE.—The Bishop of Winchester recently re-opened and dedicated the ancient chapel of St. Nicholas, Carisbrooke Castle, Isle of Wight, which has been restored as a national memorial of the ten months' captivity of Charles I. within the castle. Mr. Percy Stone was the architect for the work.

CHURCH OF ST. EDWARD, LEYTON.—A church, as a chapel-of-ease to the parish church, has just been completed at a cost of 3,300*l*., inclusively of the site. Mr. G. E. S. Streatfield's designs comprise a nave and chancel, with a west gallery, which, with the area beneath it, can be screened with revolving shutters for parochial meetings, with accommodation for 500 persons.

CHURCH, SLOUGH.—The memorial stone of a new church, to be known as St. Paul's, was laid at Slough recently. The church consists of a chancel with a semi-octagonal apsidal end, lighted by a range of clearstory windows round three sides. It is 40 ft. 8 in. long by 25 ft. wide and is 53 ft. high from the floor to the ridge. On the south side the chancel opens, through three arches, into the morning chapel. It is 38 ft. by 17 ft. and 24 ft. from floor to the apex of the ceiling. On the north side the chancel opens into the organ chamber through two arches, corresponding to those opening into the chancel on the south side. North and east of the organ chamber are the choir and clergy vestries. The nave is 86 ft. long by 25 ft. wide and 56 ft. high to the roof ridge. It opens into the north and south aisles through a range of six arches on either side and into the narthex at the west end, through three massive arches which support the west wall and bell gable. The nave is lighted by a lofty clearstory of lancet windows in triplets on the north and south aisles and through two windows in the west wall. The aisles are 87 ft. long by 11 ft. 4 in. wide, lighted by lancet windows in couples. The main entrance porches are planned in the corners, at the west end, formed by the aisles and narthex, and the main doors open into the narthex, with subsidiary doors into the west end of the aisles. One of the prominent features of the west end will be the semi-circular baptistry, opening out of the narthex internally. The extreme length of the church is 154 ft., width 84 ft., and height to the top of the bell-gable cross 78 ft. The church is being faced with Messrs. Nash's red bricks externally and internally, except such

wall space as it is intended eventually to colour, and these will be finished with cement. The roofs will be covered with dark red Broseley tiles. All the ceilings will be boarded, and in the main roofs the whole of the timbers, in wrought firs, will be visible. The seats, which are arranged to accommodate 684 adults, are to be made of Canadian oak. Messrs. J. E. K. and J. P. Cutts, of London, are the architects who have designed the church, and under whose superintendence the contract is being carried out, at a cost of 8,327*l.*, by Mr. H. Flint, of High Wycombe. Mr. W. Howard is the foreman in charge of the work.

NEW CHURCH, BEN RHYDDING.—The digging of the foundations for this church was commenced in December last, and the church is now ready for consecration. At present the building consists of nave and chancel, with seating accommodation for 240, but when the extension of the west end, the foundation stone of which was laid on Saturday last week, is completed there will be accommodation for 350. Mr. H. S. Chorley (Connon & Chorley, Leeds) is the architect. The structure is built of local stone, with random walling. There is only one side aisle. The floor is of wood blocks, and the aisles are of black and white tiles. The contractors were Messrs. Dean Bros., Ilkley, masons; Mr. T. Smith, Ilkley, joiner; Mr. Fred Myers, Ben Rhydding, plumber; and Messrs. Watson & Worsnop, Leeds, slaters. Mr. E. A. Bridge was clerk of the works.

WESLEYAN CHURCH AND SCHOOLS, MIDDLESBROUGH.—On the 11th inst. the Park Wesleyan Methodist Church and Schools in Linthorpe-road near the entrance to Middlesbrough Park, which have been built at a cost of 9,500*l.*, were formally opened. The new buildings are classic in style. The tower at the corner rises to a height of 80 ft., and the exterior is built with red pressed brick, relieved with buff terra-cotta dressings. The church consists of nave and transepts, with recess for organ and choir, and there is a small gallery at the end of the church over the entrance. The seating capacity is for about 700 persons. Attached to the church are six vestries for the use of ministers, choir, and society classes. The ceiling of the church is panelled and enriched with fibrous plaster; the windows are glazed with leaded lights. The woodwork is pitchpine, with the exception of the rostrum, which is of American walnut. Next to the schoolroom with an entrance from Linthorpe-road is the guildroom. Four classrooms are connected with the school. There are yet to be built an infants' schoolroom and six other vestries, making in all fourteen vestries for the use of the church and school. The architects were Messrs. Morley & Son, of Bradford, and the contractors for the work were:—Messrs. Bastiman Bros., brickwork; Messrs. J. and R. Mascall, slating; Messrs. W. L. Taylor & Sons, painters; fibrous plaster supplied by Messrs. Horne, of Sale; Messrs. Hudson Bros., joiner work; Mr. D. Patterson, plastering; Messrs. Baker Bros., plumbing, glazing, electric lighting, and heating; and the leaded lights were made by Mr. W. Blythe, of Bradford.

CONGREGATIONAL CHURCH, BURSLEM.—The foundation-stones of the new Woodall Memorial Church have just been laid in Moorland-road, Burslem. The building will be erected according to the plans of Messrs. A. R. Wood & Son. The church will have a nave and side aisles, the nave being 63 ft. long and 33 ft. wide, and 32 ft. high, with a vaulted ceiling and separated from the aisles by arcades of stone columns and arches. At the front end of the nave a gallery will be placed, while at the opposite end accommodation will be found for the choir, and the pulpit will be situated at one corner of the nave. There will be two entrance porches, right and left of the main front, with stone staircases leading to the gallery. On the west side of the church there are to be three vestries with lavatory accommodation. Internally, the church will be finished with stone dressings, the windows filled with stained glass, and the walls will be plastered. The ceilings of both the nave and aisles are of a circular form and groined up to the clerestory windows. The floors will be of wood blocks on concrete, and the floors of the porches and staircases will be of encaustic tiles. The choir end of the church will be raised above the nave floor 2 ft., and the nave floor itself will have a fall from the front towards the choir of 9 in. The seating will be of open benching executed on unvarnished oak. The church will be heated by means of low-pressure hot water, and lighted by means of electricity. A feature of the interior will be the large mullioned windows of the clerestory and the main gables, which are to be filled with leaden glazing. The accommodation will be as follows:—Nave, 250; two aisles, 135; choir, 50; gallery, 90; giving a total of 535. The front of the church will stand back 6 ft. from the road. It will be of red pressed bricks with red Hollington stone dressings freely used in strings, mouldings, pilasters, and tracery. There is to be a tower 12 ft. sq. and 50 ft. high to the main cornice, surmounted by a copper dome. The large gable end of the nave will be filled with a stone traceried window. A bust of the late Mr. Woodall, to be executed by Mr. Stanley Thorogood, will occupy a position in the front elevation of the church. Messrs. W. Grant & Sons are the contractors for the building, their tender being about 4,000*l.*, and Messrs. W. & R. Mellor are supplying the stonework.

PRIMITIVE METHODIST CHURCH, WEST HARTLEPOOL.—The foundation-stones have just been laid of a Primitive Methodist church in West Hartlepool. The new church, which will face into Grange-road, will be of North Ormesby metallic red facing bricks, relieved with Stockton Stone Company's dressings. The church will accommodate on the ground floor and gallery about 650, and the buildings include all the necessary adjuncts to church and Sunday school work. Messrs. Harry Barnes and C. F. Burton, of West Hartlepool, are the architects, and Mr. E. M. Tweddle, contractor.

METHODIST CHAPEL, HOPKINSTOWN.—The foundation stones of the new Trinity English Calvinistic Methodist Church (Presbyterian Church of Wales), Hopkinstown, Pontypridd, were laid recently. The building, which is of native stone, dressed with Forest of Dean red sandstone, is estimated to cost 1,700*l.*, and provides accommodation for 250 people, with a schoolroom in the basement of a like accommodation. Mr. Arthur Ll. Thomas, Pontypridd, is the architect, and Mr. Julien, Pontypridd, the builder.

SCHOOLS, RHYMNEY VALLEY.—Two new schools were opened by the Rhymney Valley School managers recently. The first, at New Tredegar, is 205 ft. long, and there is a mixed department for boys and girls, and a department for infants. Accommodation is provided for 350 boys and girls and 250 infants, making a total of 600, exclusive of the central halls. The heating throughout is by means of large open fireplaces. The buildings have been built by Mr. D. W. Davies, of Cardiff, at a cost of 10,000*l.*, from plans prepared by Messrs. James & Morgan, architects, of Cardiff, who have been assisted in the superintendence by Mr. E. Evans, clerk of works, of Bargoed. The new infants' school at Cwmsiflog is built on an elevated site, and is on the central hall system. It provides accommodation for 300 children, has five classrooms, each opening on to a central hall 75 ft. by 16 ft. The playground covers an area of 4,000 sq. yds. All the rooms are heated by open fireplaces, and ventilated by means of ceiling panels connected to extract ventilators in roof and fresh air inlet tubes. The contract was entrusted to Messrs. Lattey & Co., of Cardiff, at a cost of 6,000*l.*, and carried out from designs prepared by Messrs. James & Morgan, architects, Cardiff. Mr. E. Evans, of Bargoed, was clerk of works.

ROMAN CATHOLIC COLLEGE, LEEDS.—The Collegiate School for Girls which has been raised by the Sisters of Notre Dame in Kingston-terrace, Leeds, was opened on the 12th inst. by the Marquis of Ripon, K.G., Chancellor of the University of Leeds. About 14,000*l.* has been spent on the building, which is four stories high and in the Gothic style. Above the ground floor, on which is the dining-hall, the assembly-hall and library are situate, and above these again are the classrooms and eight music-rooms, while the top floor contains a laboratory, art and drawing rooms, as well as a lecture-room in amphitheatre style. There will be accommodation for about 200 students. The architect of the building was Mr. Simpson, of Manningham; the principal contractors were Messrs. T. Hannam & Son, Leeds; the semi-marble flooring, the dadoes in the corridors, were carried out by Mr. S. McFarlane; and the sanitary arrangements by Messrs. T. Storey & Co., Leeds. Mr. John Reid discharged the duties of clerk of works.

THEATRE, CARDIFF.—The excavations for the new theatre in Park-place have been completed and building operations will now be commenced. Messrs. James Allan & Son have secured the contract for the work, and the architects are Messrs. Runtz & Ford.

EXTENSION OF THE BUCHANAN INSTITUTION, GLASGOW.—The additions which have been made to this institution were opened recently. The estimated cost, including removal of old buildings from the site, new range of outside latrines, drainage, and alterations, is approximately 5,000*l.* The architects are Messrs. Macwhannell & Rogerson, and the measurer is Mr. J. Walker Armstrong.

ELECTRIC POWER STATION, HANDSWORTH.—The new electric light and power station at Piers-road, which is to supply Handsworth with illumination and motive power, was opened on the 9th inst. The scheme has cost between 49,000*l.* and 50,000*l.* Sir Alexander Kennedy and Mr. B. N. Jenkin were the engineers, the architects being Messrs. Henman & Cooper.

PUBLIC LIBRARY, GAINSBOROUGH.—A new public library has been erected at Gainsborough at a cost of 4,000*l.* Messrs. Scorer & Gamble, Lincoln, were the architects for the work, the contractor being Mr. Sprakes, of Doncaster.

BISHOP FRENCH MEMORIAL.—A stained-glass window has been inserted in the chancel of St. Ebbe's Church, Oxford, in memory of Bishop French, of Lahore, formerly rector. The three lights, designed and executed by Mr. T. W. Camm, of Smethwick, contain the Ascension, figures of the late Bishop, St. Thomas, and St. Aidan, with the coat-of-arms of the University and the diocese of Lahore.

LIBRARY, ILFORD.—Plans for a public library, at Ilford, Essex, have been prepared by Mr. H. Shaw, Surveyor to the Ilford Urban District Council, and tenders are to be invited. The proposed building will be erected on a site opposite the Great Eastern Railway station, out of a gift to the town of 10,000*l.* by Mr. Andrew Carnegie. The new central fire brigade station at Ilford is nearing completion, and will be opened on November 9. The estimated total cost is 8,000*l.* The plans of this were also prepared by Mr. Shaw.

HALL, WEST HAM.—The foundation stone has just been laid of a new hall for the parish of St. Mark, West Ham. The new building, with its fittings, will cost about 2,000*l.* The architect is Mr. Henry A. Saul, of Gray's-inn-square.

FOREIGN.

FRANCE.—Work is to be undertaken shortly for partial reconstruction of the Pont des Saints Pères at Paris, at a cost of 197,000 francs, to be divided between the State and the City of Paris. ——A monument was inaugurated last week at La Rochelle to the memory of the Orientalist painter Fromentin. It is the work of M. Ernest Dubois, sculptor, and M. Patouillard, architect, and is composed of a stone stele decorated with a palm and bearing a bust of the artist commemorated. At the base of the monument is an equestrian group of a mounted Arab.——A Society has been formed at Chinon with the object of preserving the numerous ancient monuments of that town, which was once a favourite resort of the Kings of France.——A large scholastic establishment has been completed at Chambourcy, from the designs of M. Gilbert.——Some large reservoirs are to be constructed at Saint-Servan, near St. Malo, for the supply of drinking water to the town. The cost is estimated at 115,000 francs. ——A sum of nearly half a million francs has been voted for various works of architecture at the town of Cholet. Among the new buildings is to be a ladies' college.——At Crécy-en-Ponthieu, a few days ago, a monument was unveiled to the memory of Jean de Luxembourg, King of Bohemia, who was killed at Crécy on the French side. The monument is designed by M. Milvoye, architect, and bears a medallion sculptured by M. Fontaine.——The French Government has acquired, at a cost of 200,000 francs, the celebrated château of Azay-le-Rideau, one of the finest examples of French architecture of the XVIth century.——A district school of architecture is shortly to be opened at Toulouse.——The fourteenth International Art Exhibition of the Principality of Monaco will be held at Monte Carlo from January to April, 1906.——A monument is to be unveiled shortly at the Parc Monceau in memory of Pailleron the dramatist. It comprises a stele carrying a bust of Pailleron, which a female figure representing "Comedy" is surrounding with garlands of flowers. M. Bernstaum is the sculptor.——There is talk of a new railway terminus at St. Malo, to be erected at a cost of nearly half a million francs.——The Municipality of Cherbourg have decided on the erection of an Art Museum.——The Municipality of Troyes has voted a sum of nearly four million francs for architecture and street improvements. Among the works contemplated is the rebuilding of the Hôtel de Ville.——It is stated that the city of Marseilles intends to open a competition among architects for the best laying out of a new quarter, in the rear of the Bourse, in place of the present insanitary streets and houses.——The death is announced, at the age of 70, of the painter Louis Douillard, a pupil of Hippolyte Flandrin and Gleyre. He exhibited first in the Salon of 1861, and obtained a medal in 1878. He was a painter both of portraits and historical subjects, religious subjects by preference. Among his works may be named "The Death of St. Thomas d'Aquinas"; "The Martyrdom of St. Sebastian"; "The Burial of St. Paul"; and a "Crucifixion." He also decorated a chapel in the church of St. Julien at Tours, and the high altar in the Chapelle de la Miséricorde, at Bayeux. M. Douillard was a member of the Société des Artistes Français.

BELGIUM.—A report has recently been drawn up by H.M. Consul-General at Antwerp (Mr. E. C. Hertslet) regarding the scheme of the Belgian Government for the extension of that port. The cost of the scheme, excluding the construction of the dry docks and the nine great subsidiary docks to the new canal dock, the cost of which will be borne by the town of Antwerp, is estimated at about 7,500,000*l.* The scheme will probably require ten years for its execution.——The Board of Trade have been notified that the municipal authorities of Antwerp are calling for tenders for the construction of a new Flemish theatre. The cost of the structure is estimated at 36,716*l.*, and a deposit of 60,000 francs (2,400*l.*) is required to qualify any tender.

SOUTH AFRICA.—A new Jewish synagogue has been opened in the Gardens at Capetown.——Lloyd's Building, a large structure in Market-square, East London, has been formally opened. The building contains a large safe deposit and numerous offices.——A new Government school building is to be erected at Christiana.——A fair amount of building is in progress at Port Shepstone, and a large hall is to be added to the local Royal Hotel.——The foundation-stone of the St. John's (New Moderate) Church, at Kimberley, is to be laid shortly.——Two new churches are to be built in Kimberley; one for Europeans and the other for natives.——At Port Elizabeth tenders are invited for the erection of a machine-shop, etc., to the Power Station in Valley-road, South End.

MISCELLANEOUS.

HOUSING PROBLEM, LIVERPOOL. — At the meeting recently of the Dwellings Sub-Committee of the Housing Committee, the Chairman (Councillor J. Roby) said that during the past municipal year there had been handed over to their care by the Housing Committee the blocks of buildings in Hornby-street, Clive-street, and Eldon-street, comprising altogether 192 tenements and two shops. The Sub-Committee had therefore under their charge fourteen different blocks of dwellings in various parts of the city from Sylvester-street in the north to Mill-street in the south, with a total annual rent-roll of 16,935*l*., the tenements ranging from a one-roomed dwelling suitable for two people at a rental of from 1s. 9d. to 2s. 9d. per week, to a four-roomed tenement suitable for a family at from 4s. 6d. to 5s. 6d. per week. The total number of tenements under their charge amounted to fifteen shops and 1,720 dwellings, of which dwellings 540, situate in St. Martin's-cottages, Victoria-square, Juvenal-buildings, and Arley-street, were let to any respectable person, and none were vacant; the remaining tenements were reserved, in accordance with the resolution of the Housing Committee, "for persons who had been dispossessed through the demolition of insanitary property by the Corporation, and for persons who were occupying insanitary houses or houses which had been reported as being over-crowded." Of these there were 1,623 occupied and ninety-four vacant, the percentage of vacancies (5·69) being thus extremely small. Within a few months' time some 288 additional tenements in Shelley-street, Upper Mann-street, and Hornby-street would be ready for occupation, and the rent-roll would be increased to about 20,000*l*. per annum. The collection of rents for 1904 had averaged 94·265 per cent. of the collectable rent, and for the portion to date of the present year an average of 95·20 per cent. had been maintained—an exceptionally good result from this class of property, notwithstanding the great amount of distress owing to lack of employment. The concrete dwellings in Eldon-street, comprising twelve tenements, were all let, and the tenants appeared very well satisfied with them.

PROPERTIES FOR SALE.—Some interesting properties have recently been placed in the market. They include Hurstmonceaux Castle, Sussex, with a beautifully-timbered park of 182 acres, and the moated castle, one of the largest after its kind, which was built of brick with stone dressings, by Sir Roger de Fiennes, treasurer of Henry VI.; in 1777 most of the interior was dismantled, and the fabric was suffered to decay, but there remain the ivy-covered ruins of the great flanking towers of the main gateway, and of the watch-turrets and courtyards; the building is rectangular on plan, measuring 206 ft. by 214 ft. Francis Grose, the antiquary, made some valuable sketches before the walls had become dilapidated. ——Hunsdon House, Hertfordshire, originally built in 1447 by Sir John Oldhall, and acquired by Henry VIII., who converted it into a residence for his children. Queen Elizabeth bestowed Hunsdon upon her cousin and chamberlain, Sir Henry Cary, whom she created Lord Hunsdon, and whose vast monument, erected by his son, is in the chapel of St. John the Baptist, Westminster Abbey. The shell of the present house is supposed to belong to the older structure, and there are some Jacobean features in the interior, but in 1804 much of the house was re-constructed, and the moat was filled up, and on the south side converted into a terrace-walk.——Cassiobury End, near Watford, with an estate of 225 acres, entered from the road to Croxley Green through iron gates of which one pair is a relic of Bishop Bonner's Palace at Bow.——Ightham Court, with the manors of Ightham, Stansted, and Wrotham, the Wrotham Lime Works, Oldbury Wood containing remains of an ancient camp, and several farms, the whole twenty-eight lots covering an aggregate of nearly 2,200 acres. Ightham Court (which must not be confused with the neighbouring Ightham Mote), having two old moats and a fine avenue of lime-trees, was built in the latter half of the XVIth century, and lies in the beautiful district of Kent near Sevenoaks and Maidstone; at Wrotham are vestiges of a palace of the archbishops of Canterbury.

THE LABOUR MARKET IN THE COLONIES.—The October circulars of the Emigrants' Information Office show that in the six States which compose the *Commonwealth of Australia* there is not much demand for more labour, and none of these States give any money assistance towards emigrants' passages except Queensland and Western Australia. An emigrant must be careful not to enter beforehand into any agreement to perform manual labour in any State of the Commonwealth, as in that case he will not be allowed to land. There is, as a rule, a sufficient supply of mechanics, and men of this class are not recommended to go to Australia unless they are specially skilled in their trades, or have friends to go to, or unless they can afford to wait a little till they find suitable employment. For those who have sufficient capital to buy land there are fair openings, but it is always safer to work for a year or so in the country before investing money in farm property. In Western Australia settlers can obtain 160 acres free of cost. There is no demand for coal miners, and not much for gold miners unless they are experienced. Clerks, shopmen, or warehousemen are not wanted. *New Zealand* offers many advantages to emigrants both as regards its resources and its climate, and reduced passages are granted to those who possess a capital of 50*l*. There is a large coal mining and gold mining industry; and skilled miners have fair chances of work. The manufactories are not very large, but are varied, and, though there is no special demand for more men, a competent mechanic should be able to find employment without much delay. No one may enter *Cape Colony* unless he possesses 20*l*. on arrival, or has secured work beforehand. There is no opening for more labour, the supply exceeding the demand in nearly every department of industry. In *Natal* labour is plentiful, and no one is recommended to go there now, unless he obtains a nominated passage, or has a little capital. No one may enter the *Transvaal* without a permit, which should be applied for at least a week before sailing. Though the output of gold is very large, and more white men are being employed about the mines than was the case last year, the supply of labour in all trades at Johannesburg is still considerably in excess of the demand. In Pretoria and in country districts also the supply of white labour is ample. Men are therefore warned against going to the Transvaal at the present time, unless they have secured work beforehand or have sufficient means to keep themselves for some months. No one may enter the *Orange River Colony* without a permit. There is no improvement in the demand for labour, and persons are warned against going to the Colony at the present time in search of work.

DOVER AS A PORT OF CALL.—Last week the growing importance of Dover as an ocean port was emphasised by the visit of the *Amerika* on her first trip across the Atlantic. This magnificent example of the shipbuilders' skill, the largest vessel ever built, was brought alongside the Prince of Wales Pier with the utmost ease, and despite her draught of 29 ft. found a further depth of some 13 ft. or more at the landing-stage. The occasion served to demonstrate the value of the national harbour works, as well as of the less imposing works executed by the enterprising Harbour Board of the ancient Cinque Port.

A SALE OF ENGRAVINGS.—Owing to the retirement of Mr. Arthur Lucas, the art publisher, of Baker-street, the whole of his large stock of engravings and etchings after numerous and mostly well-known pictures are shortly to be sold by auction by Messrs. Moss & Jameson. This will probably be a good opportunity for those who wish to secure such works. The illustrated catalogue shows an interesting and varied collection of engravings and etchings.

BRIDGE, HULL.—The Stoneferry Bridge, which spans the River Hull, about two miles from the Humber, was opened on the 16th inst. It is a steel swing bridge, constructed in two spans (a movable span of 150 ft., giving a clear opening to river traffic of 61 ft., and a fixed span of 26 ft.), and it is worked by electric power from the Corporation mains. The structure, which was designed by Mr. White, the City Engineer, with approaches, has cost over 20,000*l*., and its erection has necessitated the carrying out of other improvements in the district, such as the making of a new street on the west approach, the widening of existing thoroughfares, and the construction of an 8-ft. cast-iron subway under the river for water, gas, and electric mains. This subway is 99 ft. long, and is entered by shafts 52 ft. deep.

LETCHWORTH CHEAP COTTAGES.—In consequence of criticism by Councillor Bristow the General Purposes Committee of the Lambeth Borough Council recommend "that no representative be appointed to the further conference" at Letchworth. Mr. Bristow, who at the request of the Council visited the Garden City at Letchworth on Saturday, September 16, and attended the conference of delegates from various parts of the country, says he was very much disappointed. He was prepared to see cheap cottages, but those he saw were cheap indeed. In the first prize house large patches of plastering had already left the walls, the second prize cottage was built with feather-edged boarding, and the third prize structure was a bungalow built of iron netting stretched on uprights and plastered. So far as Mr. Bristow could judge not a house on the estate could be applied to London or its suburbs, and the boasted 150*l*. house was a myth, for according to the chairman's speech at the conference the majority of the cottages cost more than 150*l*.; moreover, no architect's or surveyor's fees, legal expenses, builder's profits, or cost of conveyance of material from a distance were included in such cost. He found that firms supplying patent materials loomed large all round, and that several houses were advertising stations for house-furnishing firms. The gardens (about 16 rods) were not larger than is usually found in country places like Letchworth, but in the houses everything seemed sacrificed to cheapness. The company gave 40*l*. per acre for the land, and they did not sell the freehold, but let on building leases at an average of 17*l*. 10s. per acre, which at twenty-five years' purchase came to about 400*l*. per acre, and left a good margin from the initial expenses of laying out the estate.

WAGES IN THE GERMAN BUILDING TRADE.—Mr. Schwabach, British Consul-General in Berlin, in his latest report, writes that wages in the building trade have improved during the last two years, and at a number of towns in Germany a reduction of working hours has been effected. The highest wages obtain in Hamburg and Rhineland, Westphalia; the lowest rates in the Prussian provinces of Posen and Silesia and in Thuringia. A comparison with 1901 shows that the wages decreased in some districts while in others there was a slight improvement. The figures in the following table refer to "Vollarbeiter," *i.e.*, hands in full employment throughout the year. For these the yearly earnings were:—

	Amount in 1901. £. s.	1904. £. s.
Hamburg	57 5	58 17
North-East District	53 13	58 3
South-West District	51 5	51 16
Magdeburg	47 12	49 10
Rhineland, Westphalia	51 15	50 4
Würtemburg	46 14	46 15
Saxony	50 1	48 14
Hanover	48 2	48 1
Hesse-Nassau	50 15	47 0
Bavaria	46 16	46 10
Silesia and Pomerania	38 3	39 3
Thuringia	37 7	38 10

The average per annum worked out for 1904 as 47*l*. 17s., or a little more than 3s. per working day, which cannot be considered high in comparison with other trades. The wage tariff which has existed since 1899, and put an end to the wage movement in Berlin in this trade, has been extended for two years, until March 31, 1907, with an increase of 3pf. (equal to 0¼d.) per hour. Thus masons and carpenters now receive 73pf. (about 9d.), other workmen 48pf. (4¾d.) per hour.

GREENWICH HOSPITAL.—In the block known as King William's Building is the great hall, the interior of which Sir James Thornhill decorated and painted in 1708-1727. During some months past all the painted work, the ceiling excepted, has been cleaned and renovated under the directions of the curator, Mr. W. F. Yeames, R.A., and will shortly be finished with the completion of the upper hall. The paintings and reliefs in the cupola and covings of the lower hall, or vestibule, are of a compass, and the Winds, those in the middle and upper halls, are of allegorical and representative groups of Queen Anne and her consort, William and Mary, George I., and Public Weal and Safety; into one group Thornhill introduced his own portrait.

HAMPTON COURT PALACE.—A restoration is being carried out of the paintings on the wall and ceiling of the King's great staircase. The paintings, for the most part of mythological subjects, were originally executed by Verrio, and inspired Pope's satirical couplet upon the works of their author.

ANTIQUARIAN DISCOVERY, BRADWELL CHURCH, ESSEX.—At Bradwell Church, Essex, some interesting discoveries of church decoration in the XIVth century have been made. On the splay of an early decorated window north of the chancel two paintings have been revealed, the one on the left being a female figure and the one on the right the figure of an angel holding a crucifix. On the lintel are two angels with faces turned towards the seated figure of our Lord, whose left hand is raised in blessing. In addition to the above, some XVth century paintings, the drawing and colouring of which are of a more perfect character, have been found, comprising the figure of an angel with outstretched wings on the east wall of the chancel, and the face of an angel on the north wall of the nave.—*Standard*.

NEW GRAVING DOCK, SOUTHAMPTON.—The London and South-Western Railway Company send us a photograph of the graving dock just

completed for them at Southampton. Its principal dimensions are:—Length, from point of sill to dock head, 875½ ft.; length occupied by keel blocks, 839 ft.; width of entrance, 90 ft.; width of dock at floor level, 90 ft.; width of dock at cope level, 125 ft.; depth of dock from cope to floor, 43 ft.; depth of water over sill at high water of spring tides, 33 ft.; depth of water over sill at high water of neap tides, 29½ ft. Since they took possession of the dock property in 1892, the South-Western Railway Company have reclaimed an area of nearly 100 acres, formerly known as the "Mudlands," and the new dock stands upon the northerly portion of this land. It is built almost entirely of Portland cement concrete. The entrance gates are covered by greenheart timber meeting faces, strengthened by steel, and are opened and closed by direct-acting hydraulic rams, made by Armstrong, Whitworth, & Co. The plant provided for graving purposes includes a travelling electric crane—said to be the largest in existence—capable of lifting more than 50 tons at a radius of 87 ft. The new dock is to be opened to-day.

GRAMMAR SCHOOL ENLARGEMENT, STAFFORD.—As a memorial to the late Sir Thomas Salt, the buildings of King Edward VI. Grammar School at Stafford have been enlarged. The work has been carried out by Messrs. Adams & Pemberton, Stafford, from plans prepared by Mr. H. T. Sandy, architect, Stafford. The enlargement consists of the addition of a second story to the western block of the school buildings. The total cost, including alterations to the old buildings, has been 1,600*l.*

ARCHITECTURAL AND BUILDING WORK, SHEFFIELD.—Among works completed during the year by the Sheffield City Surveyor's Department are the Queen's-road car-shed extension, for the Tramways Committee, at a cost of 21,830*l.*; Weedon-street Bridge, 14,000*l.*; and a wall round St. Philip's churchyard, 1,547*l.*, for the Improvement Committee; cottages at High Wincobank, 8,366*l.*, and alterations to Worthing-road *depôt*, 2,098*l.*, for the Health Committee; and Wincobank Police Station, 3,100*l.*, for the Watch Committee. The houses at High Wincobank have worked out at a cost of 264*l.* 8s. 2d. each. Reference is made in the Surveyor's Report to the discontinuance of the Works Construction Department. The whole of the materials and plant at Worthing-road were disposed of, and the buildings, excluding the offices, were taken over by the Health Committee. The building trade, according to statistics, appears to have had a somewhat downward tendency; 1,262 plans were submitted during the year, a decrease of sixty-two, but an increase on (1,199) the average number submitted during the last five years. Twenty-nine street and sewer plans were approved. For new buildings 1,093 plans were approved, and plans were passed for 2,527 houses, an increase on the 2,338 of last year. Altogether 45,008 houses have been erected in Sheffield since the adoption of the by-laws in 1864. The portion of the Report dealing with tramway work shows that upwards of 38 miles of new tramways have been constructed since the Corporation took possession of the undertaking. Of this total 8 miles were single line, and over 30 miles double. The Council have authority to lay other tramways, representing over 15 miles of street length; 7 m. 5 f. 9·6 c. of single line, and 7 m. 7 f. 2·5 c. of double.

ROYAL SANITARY INSTITUTE.—At an examination in sanitary science as applied to buildings and public works, held at Liverpool on October 13 and 14, four candidates presented themselves; one only, Mr. K. W. Adcock (Bradford), was granted a certificate.

CAPITAL AND LABOUR.

THE LONDON BUILDING TRADE.—In regard to the new Working Rule Agreements which have been signed by the London Master Builders' Association and all the trade representatives except mill-sawyers and plasterers, with whom negotiations are still proceeding, it has been arranged that there shall be but two periods of labour—i.e., summer, 39 weeks; and winter, beginning on the second Monday in November, of 13 weeks. Plumbers will commence work at the same time as the other trades, but they will retain their hour for dinner in the winter. The conciliation rule has been made universal, and no strike can in future take place against a workman on the ground of his not belonging to a trade society—at least, the unions will discountenance any such movement. Doubtful points, in respect to country money and expenses where workmen are sent to a distance, have been made clearer; wages and regulations for men employed on night gangs have been formulated; and in all cases provision has been made for the alteration of any single rule without invalidating the whole. The negotiations were carried through with great courtesy and moderation, and it is to be hoped that the new agreement will be lasting and productive of good.

STATE OF THE BUILDING TRADES.—Employment in the building trades continued dull during September, and on the whole was much the same as a month ago. Bricklayers report a slight improvement, but with masons, carpenters and joiners and painters employment was rather worse. Compared with a year ago employment was slightly worse. With carpenters and joiners, however, it was about the same, and with bricklayers and plumbers, and masons and slaters in Scotland, there was a slight improvement. The percentage of trade union carpenters and joiners unemployed at the end of September was 7·1, as compared with 6·5 per cent. a month ago, and 7·0 per cent. in September, 1904. The percentage of trade union plumbers unemployed at the end of September was 8·9, the same as a month ago. In September, 1904, the percentage was 9·8.—*Labour Gazette.*

GLASGOW PLUMBERS.—The Glasgow plumbers, after being out on strike for nearly six months against a reduction of a halfpenny per hour, have resolved to go back to work at the reduction. The wages will now be ninepence per hour. About two-thirds of the plumbers in the city are affected by the decision, the remaining third, who are members of another association, having agreed to the reduction at the outset.

TO CORRESPONDENTS.

H. S. H. (the subject will be dealt with fully later on).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance. The Editor cannot undertake to read and consider articles offered for acceptance unless they are type-written.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

23,192 of 1904.—T. H. DENESSEN: *Presses for Use in the Manufacture of Tiles and the like.*

This invention relates to revolving presses, in which a device is used for cutting the burr from the edges of tiles, characterised by the feature that the cutter is located in a slot arranged in the pressing face of the upper working mould, and is connected by means of pins passing through this mould with a frame suspended by springs between the pressing head and its mould, the movement of this frame being effected by cam discs, which are turned through the intervention of toothed segments upon the crank shaft in such a manner that at the proper moment a quick downward and upward return movement of the cutting frame can take place.

25,864 of 1904.—C. H. BENTLEY, E. H. BENTLEY, and J. BENTLEY: *Joint for Earthenware and other Pipes.*

This relates to joints for earthenware and other suitable pipes, formed by a conical recess in the pipe socket, with an internal flange or shoulder at the mouth of said socket, and a conical recess in the spigot end of the pipe, such recesses (when pipes are in position) forming a dovetail or arrow-head chamber for the reception of cement or other binding materials.

1,444 of 1905.—M. J. ADAMS: *Sinks.*

The object of this invention is to provide a well or dish in a sink so that at will the sink may be used either as an ordinary sink, draining through a plug-hole, or if it is desired to hold up water, as in a wash bowl, the plug is inserted. A very trifling dish or slope will serve, or it may be necessary in some cases to use a more decided bowl for washing purposes, or a still deeper basin. In this latter form it is sometimes necessary to use a grating or cover over the basin. The plug, or waste exit, may be placed in any convenient position.

3,139 of 1905.—R. C. SHARP: *Kilns for Drying and Burning Earthenware Goods, Applicable for Drying Malt, Wet Crops, and the like.*

This relates to an apparatus for drying ceramic and other goods where a drying chamber or chambers is or are employed, the hollow walls of which form flues for receiving heated gases from kilns or other sources of heat, and consists in that the said gases first enter at the exit end and then traverse one bottom flue or set of bottom flues on the same level and a set of drying chamber side wall flues, and when arriving at the other, or entry, end of the apparatus commingle with fresh hot gases from the kilns, whereupon the gases return through another bottom flue or set of flues and other wall flues to the exit end of the apparatus, where they enter a common receiving flue and then disperse into the interior of the drying chamber, and after returning to the entry end are withdrawn by a fan or equivalent means, the gases by their several flues thus travelling once simultaneously in opposite directions in the same wall, all in such manner that the drying chamber is evenly heated along the bottom and sides.

6,986 of 1905.—G. U. MERRILL: *Combined Strainer and Valve for Water Supply Pipes and the like.*

This invention consists in the combination of a casing having a plurality of substantially parallel passage-ways therethrough, hollow heads removably attached to the ends of said casing over the ends of said passage-ways, said heads being adapted to afford communication between said passage-ways and the ends of the pipe system in which the apparatus is installed, a shaft arranged in each head transversely of said passage-ways, valves inclosed, one in each head, between said shaft and said casing ends, and adapted to close off one passage-way while leaving the other free, and operative connecting means between each valve and shaft.

7,739 of 1905.—H. C. HEIDE: *Valve Mechanism for Water-heaters.*

This relates to an automatic valve mechanism for water-heaters wherein the fuel valve is automatically and reliably controlled by the pressure of the water supplied to the water-heater, being so arranged to act upon two fuel valves controlling members or pistons, in such connexion with each other, and to a fuel valve, that, on the reduction of pressure above the fuel valve opening member, the fuel valve will be opened, and retained open so long as the flow of water through the water-heater is greater than can be supplied past the fuel valve opening member through a restricted passage or its equivalent, under a difference of pressure at its opposite ends sufficient to prevent the fuel valve closing member from moving.

7,563 of 1905.—W. A. MERRALLS: *Rock Breakers and Pulverisers.*

This invention relates to a rock breaker and pulveriser, and consists of a grip-wheel having a grooved periphery fast on the shaft of the crushing cylinder, a bearing-plate mounted in the plane of the grip-wheel and having a grooved and eccentrically-curved periphery, and balls or equivalent anti-friction devices between the grip-wheel and the bearing-plate.

20,572 of 1904.—A. H. KIMMINS: *Rain-water Conductors or Drainage Channels for Street and Other Uses.*

This relates to a safety cast-iron rain-water conductor. The object of the invention is to fasten down quickly the lids of the trough by means of a stud to which is attached a plate. By inserting a square key into a square hole provided for it and turning the key partly round the plate is released from two retaining lugs, and so the lid of the trough may be lifted off for the purpose of cleaning. On replacing the lid and inserting the square key into the square hole and turning the key in the opposite direction the plate is brought under the lugs and the lid is thus fastened down again.

22,230 of 1904.—H. HOBSON: *Wash-down Water-closets, Sinks, and the like.*

This relates to an improved means for flushing water-closets, consisting in the combination with an ordinary sink and water-closet of a reservoir or tank to receive the water from the sink, a siphon arrangement located between the tank and the water-closet, and an additional siphon arrangement at the discharge side of the water-closet besides the one ordinarily used.

23,364 of 1904.—A. H. VAN DER VIJGH, H. VAN DER VIJGH, and G. VAN DER VIJGH: *Manufacture of Artificial Stone.*

This relates to the manufacture of artificial stone. According to the invention the slag sand is dispensed with and the percentage of pumice stone is greatly increased. Plaster of Paris is also replaced by Portland cement.

25,285 of 1904.—H. JAMES: *Wash-basins, Baths, Urinals, Water-closet Pans, and the like.*

This invention relates to wash-basins, baths, urinals, water-closet pans, and the like, and consists of a shutter or valve between the main interior of the said article and the outlet therefrom, the said shutter or valve constituting, when closed, a portion of the walls of the overflow passage, and when open allowing of the rapid escape of the contents from the said main interior to the said outlet, and when turned aside, or removed, affording unimpeded access to the

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

overflow passage without interfering with any trap there may be provided to intercept sewer gas.

17,595 of 1904.—CONDUITS & FITTINGS, LTD., D. M. EDWARDS, and E. A. BROWN: *Bends, Elbows, and Other Angle-pieces for Electric Conduits.*

This relates to a divided bend, elbow, or other connecting fitting for tubular conduits, the sockets or end portions of which are each formed with one part containing a greater portion of the socket than the other part so as to prevent the tubes of the conduit from becoming detached.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

Oct. 6.—By STEPHENSON & ALEXANDER (at Caerphilly).

Caerphilly, Glamorgan. — "The Goodrich (Everglyn) Estate," f.g. rents 356*l.* 7s. 9d., reversions varying from 37 to 99 yrs. (in numerous lots)	£9,264
Freehold cottage and gdn.	100

Oct. 7.—By SPELMANS' (at Norwich).

Hethersett, Norfolk.—Freehold holding with butchery, area 7 a. 1 r. 19 p., y.r. 37*l.*	655
A freehold occupation, 2 a. 2 r. 21 p., p.	330
Four pieces of pasture, 2 a. 3 r. 30 p., f., p.	298
Two freehold cottages	210

By STEPHENSON & ALEXANDER (at Cardiff).

Caerphilly, Glamorgan. — "The Goodrich (Everglyn) Estate," comprising farms, lands, etc.; also the "Bowles Inn," area 1,073 acres, f. (in numerous lots)	40,314

By BENTLEY & SONS (at Pontefract).

Whitley, Yorks.—"Whitley Lodge Estate" and "Whitefield Close," 253 a. 3 r. 0 p., f.	10,000
Two freehold closes of land, 14 a. 2 r. 18 p.	885

Oct. 9.—By G. B. HILLIARD & SON.

Battersea.—42, Juer-st., u.t. 81½ yrs., g.r. 6*l.*, p.	430

By MAY & ROWDEN.

St. John's Wood.—5, Loudoun-rd., u.t. 15 yrs., g.r. 5*l.*, y.r. 100*l.*	590
Marylebone.—84, Balcombe-st., u.t. 15½ yrs., g.r. 10*l.*, e.r. 65*l.*	300
Harrow.—Northolt-rd., two cottages, also smith's and wheelwright's s., yard, &c., area 5,368 ft., f., p.	610

By G. C. PHILLIPS.

Great Wakering, Essex.—"Little Potton Farm," with twenty-four oyster pits, 339 a. 3 r. 37 p., f., y.r. 168*l.*	1,000

By RUMBALL & EDWARDS.

South Mimms, Middx.—"Pope's Farm," 59 a. 0 r. 16 p., f., e.r. 150*l.*	4,000
A freehold cottage, w.r. 20*l.* 8s.	260
"Lady Kirk Cottages" (two), f., w.r. 39*l.*	425
Two enclosures of pasture, 15 a. 1 r. 32 p., f.	1,200

By G. A. WILKINSON & SON.

Islington.—68, Oxford-rd., u.t. 47 yrs., g.r. 3*l.*, p.	360
Hackney.—83, Victoria Park-rd., u.t. 29 yrs., g.r. 8*l.*, p.	300

Oct. 10.—By G. HEAD & Co.

Twickenham. — Colne-rd., The Wheatsheaf Brewery, a freehold rental of 120*l.*, reversion in 53½ yrs.	2,175

By ROGERS, CHAPMAN, & THOMAS.

Pimlico.—18, St. George's-rd., u.t. 20½ yrs., g.r. 14*l.*, y.r. 120*l.*	900
Kew Gardens.—3, Hatherley-rd., u.t. 71½ yrs., g.r. 12*l.*, p.	750

By DOUGLAS YOUNG & Co. (at Winchester House).

Battersea.—Bridge-rd. West, The Stone Yard, f.g.r. 40*l.*, reversion in 47½ yrs.	1,340
High-st., "Bricklayer's Arms" b-h., f.g.r. 30*l.* (reducible to 16*l.*), reversion in 68 yrs.	430
95 to 101 (odd), High-st., c., w.r. 76*l.* 14s.	400
12 to 17, Simpson-st., u.t. 51 yrs., g.r. 31*l.* 10s., w.r. 191*l.* 2s.	1,170
38, 40 to 45, Rowena-cres., u.t. 72 yrs., g.r. 35*l.*, y.r. 229*l.* 12s.	1,900
66 to 84 (even), Shillington-st., f., w.r. 184*l.* 12s.	1,700
90 and 92, Cabul-rd. (shop, stabling, etc.), f., w.r. 53*l.* 6s.	550
94 to 102 (even), Cabul-rd., f., w.r. 88*l.* 8s.	850
1, Latchmere-gr. (s.), f., w.r. 44*l.* 4s.	360
2 to 17, Latchmere-gr., f., y.r. 418*l.* 16s.	4,480
Latchmere-gr., f.g.r. 20*l.*, reversion in 98 yrs.	465
18 to 31, Latchmere-gr., area 39,500 ft., f., w.r. 364*l.*	3,750
32 to 37, Latchmere-gr., f., y.r. 141*l.* 8s.	1,440
38 to 44, Latchmere-gr., area 2,500 ft., f., w.r. 152*l.* 2s.	1,230
45 to 61, Latchmere-gr., f., w.r. 308*l.* 12s.	2,920
Latchmere-gr., f.g. rents 30*l.*, reversion in 73½ yrs.	730
72 to 81, Latchmere-gr., f., w.r. 189*l.* 16s.	1,620
90 to 93, Latchmere-gr., f., w.r. 75*l.* 8s.	640
Latchmere-gr., f.g.r. 20*l.*, reversion in 76 yrs.	515
417 and 419, Battersea Park-rd., f., y.r. 70*l.*	1,040
363, Battersea Park-rd. (s.), f., y.r. 55*l.*	670
51 and 53, Chatham-st., u.t. 59 yrs., g.r. 10*l.* w.r. 66*l.* 8s.	500
Millgrove-st., f.g. rents 28*l.*, reversion in 50 yrs.	685
347, 349, and 351, Battersea Park-rd. (s.), and premises in rear, f., y.r. 70*l.*	2,710
1 to 63 (odd), Chesney-st., f., w.r. 599*l.* 18s.	6,000
2 to 34 (even), Chesney-st., f., w.r. 367*l.* 18s.	3,520
341 and 343, Battersea Park-rd. (s.), f., y.r. 95*l.*	1,910
Battersea Park-rd., "Prince of Wales" b-h., a freehold rental of 100*l.*, reversion in 43 yrs.	3,050

By JAMES ELEY (at Boston).

Boston, Lincs.—24, Strait Bargate (business premises), f., p.	3,000

Oct. 11.—By BISLEY & SONS.

Rotherhithe.—99, Lower-rd., f., e.r. 150*l.*	3,500
Bermondsey.—25, Cherry-gdn.-st., f., w.r. 31*l.* 4s.	195
Rotherhithe.—584, Rotherhithe-st., f., w.r. 20*l.* 16s.	£150
74, Paradise-st., a profit rental of 45*l.* 4s. 8d. for 75 yrs.	600
Deptford.—20, 22, and 24, Abinger-rd., also l.g.r. 6*l.*, u.t. 34 yrs., g.r. 12*l.*, y.r. 94*l.* 18s.	675
Rotherhithe.—93, Chilton-st., u.t. 30 yrs., g.r. 2*l.* 10s., w.r. 33*l.* 16s.	190
Bermondsey.—17 and 18, Martin-st., u.t. 33 yrs., g.r. 5*l.* 10s., w.r. 65*l.*	445
23, 25, 27, and 29, Keetons-rd., u.t. 39 yrs., g.r. 10*l.*, w.r. 140*l.* 8s.	1,025
Rotherhithe.—1 to 11, Claremont-pl., u.t. 2¼ yrs., g.r. 30*l.*, w.r. 343*l.*	120
Deptford.—13, 15, 17, and 19, Windmill-la., u.t. 37 yrs., g.r. 8*l.*, w.r. 122*l.* 4s.	805

By FRANCIS DOD & Co.

Clapton.—141, Elderfield-rd., u.t. 73 yrs., g.r. 5*l.*, w.r. 42*l.* 18s.	330
Stoke Newington.—29 and 30, Victoria-rd., u.t. 39 yrs., g.r. nil, w.r. 70*l.* 4s.	410
6, Gordon-rd., u.t. 54 yrs., g.r. 6*l.* 13s. 4d., w.r. 58*l.* 10s.	330

By E. HUGH HENRY.

Old Ford.—111 and 113, St. Stephen's-rd., f., w.r. 59*l.* 16s.	580
70 and 72, Ford-rd., f., w.r. 57*l.* 4s.	590
Hackney.—26 and 27, Connor-st., f., w.r. 46*l.* 16s.	520
56, 57, 58, and 59, Havelock-st., u.t. 50 yrs., g.r. 12*l.* 12s., w.r. 93*l.* 12s.	670
4 and 6, Kenton-rd., u.t. 39 yrs., g.r. 8*l.* 10s., y.r. 84*l.*	510
Homerton.—7, 9, and 11, Church-rd., c., w.r. 88*l.* 8s.	885
Clapham.—22 and 24, Deauville-rd., u.t. 85 yrs., g.r. 14*l.*, y.r. 78*l.*	765
16, Cavendish-rd., f., p.	500

By HOBSON, RICHARDS, & Co.

Stamford Hill. — Leabourne-rd., f.g. rents 59*l.* 12s., reversion in 65 yrs.	1,430
Moundfield-rd., f.g. rents 40*l.*, same reversion.	940
Castlewood-rd., f.g. rents 216*l.*, similar reversion.	5,395

By HUMBERT & FLINT.

Stanmore, Middx.—Ten freehold cottages, main rd., y.r. 162*l.* 10s.	2,000
East Molesey.—"Newlyn" and "Pitana," Wolsey-rd., f., y.r. 150*l.*	2,400

By SALTER, REX, & Co.

Crouch End.—33 and 35, Middle-la., u.t. 71 and 40 yrs., g.r. 6*l.* 10s., y.r. 91*l.*	600
Camden Town.—62, Camden-rd., u.t. 25 yrs., g.r. nil, p.	500

By WAGSTAFF & SONS.

Holborn.—38, Verulam-st., f., p.	400
Stoke Newington.—19, Wolsey-rd., u.t. 44 yrs., g.r. 5*l.* 10s., y.r. 32*l.*	350

By DOUGLAS YOUNG & Co. (at Winchester House).

Battersea.—345, Battersea Park-rd. (s. with slaughter-house), f., y.r. 40*l.*	860
2 to 62 (even), Parkside-st., f., w.r. 860*l.* 12s.	10,120
1 to 61 (odd), Parkside-st., f., w.r. 897*l.*	11,000
331 to 337 (odd), Battersea Park-rd (s.), f., y.r. 178*l.*	3,830
13 to 21 (odd), Kennard-st., u.t. 63 yrs., g.r. 27*l.* 10s., w.r. 156*l.*	1,030
25 to 39 (odd), Park-gr., f., w.r. 118*l.*	900
7 to 27 (odd), Savona-pl., and 1 to 11 (odd), Tidemore-st., u.t. 38 yrs. g.r. 21*l.*, y.r. 399*l.* 2s.	2,000
169 and 171, New-rd., f., w.r. 44*l.* 4s.	380
Wandsworth.—4 to 10 (even), Southville, f., w.r. 98*l.* 18s.	1,040
225, Wandsworth-rd.; 2 to 14 (even), Wilcox-rd.; 2 and 4, Simpson-st., u.t. 17 yrs., g.r. 10*l.*, y.r. 280*l.* 9s.	1,500
Lambeth.—90 to 98 (even), Vauxhall-walk (s.), u.t. 11 yrs., g.r. 20*l.* 10s., w.r. 164*l.* 10s.	350
71 to 77 (odd), Vauxhall-walk, f., w.r 152*l.* 2s.	1,820
51 to 59 (odd), Vauxhall-walk (factory), f., y.r. 195*l.*	4,000
26 to 38 (even), Jonathan-st., f., w.r. 288*l.* 12s.	3,100
45 to 49, Walnut Tree-walk; 49, 50, and 51, St. Alban's-st., and the "Young Prince" b.h.; also l.g.r. 4*l.* 5s.; u.t. 13 yrs., g.r. 27*l.*, w.r. 427*l.* 6s.	1,090
13 to 21, Over-pl., f., w.r. 133*l.* 18s.	1,100
3, York-st., u.t. 12½ yrs., g.r. 6*l.*, y.r. 70*l.*	500
Clapham.—261, Clapham-rd., and 15, Northall-st., f., y.r. 77*l.* 10s.	1,140
263 to 273 (odd), Clapham-rd, 1 to 11 (odd), Lingham-st., 1 to 13 (odd), Northall-st., area 28,350 ft., f., y.r. 611*l.* 4s.	7,650
Brixton.—5, 6, and 10, Russell-gr., y.r. 96*l.*; also l.g.r. 18*l.* 15s., u.t. 15 yrs., g.r. 30*l.* 15s.	215
32 and 34, Talma-rd., u.t. 67 yrs., g.r. 12*l.*, w.r. 75*l.* 8s.	520
36 to 42 (even), Talma-rd., u.t. 67 yrs., g.r. nil, y.r. 116*l.*	1,600
Somers-rd., etc., f.g.r. 25*l.*, reversion in 44½ yrs.	640
Bermondsey.—19 and 20, Laxon-st., f., w.r. 41*l.* 12s.	430
Kentish Town.—Malden-rd., "The Malden Arms," p.h., l.g.r. 100*l.*, u.t. 39½ yrs., g.r. 50*l.*, with reversion	840
Belgravia.—44, Eaton-ter. (s.), u.t. 12½ yrs., g.r. 3*l.*, y.r. 42*l.*	260
Pimlico.—58 and 59, Pulford-st., u.t. 32 yrs., g.r. 15*l.*, y.r. 86*l.*	425
17, Pulford-st., u.t. 9½ yrs., g.r. 3*l.* 9s., y.r. 30*l.*	100

Oct. 12.—By BARNARD & Co.

Hammersmith.—14, Clifton-rd., u.t. 71 yrs., g.r. 6*l.*, e.r. 36*l.*	360

By W. J. LODGE & Co.

Wimbledon.—16, Latimer-rd., f., e.r. 38*l.*	450

By C. C. & T. MOORE.

Mile End.—31, Single-st., f., w.r. 26*l.*	265

By NEWBON, EDWARDS, & SHEPHARD.

Islington.—22, Florence-st., f., y.r. 40*l.*	725
14, Oxford-ter., u.t. 448 yrs., g.r. 8*l.*, e.r. 48*l.*	485
Dalston.—2, 6, and 8, Montague-rd., u.t. 55 yrs., g.r. 18*l.*, y.r. 108*l.*	930
Hackney.—88, Weymouth-ter., f., w.r. 32*l.* 10s.	260
Clapton.—129, Lower Clapton-rd., u.t. 57 yrs., g.r. 10*l.*, y.r. 50*l.*	525
47, Mount Pleasant-la., u.t. 48 yrs., g.r. 3*l.* 15s., e.r. 36*l.*	275

By WILLIAM HOLLIS.

Finchley.—27, Lichfield-gr., u.t. 61 yrs., g.r. 6*l.*, y.r. 49*l.* 8s.	£300

By STIMSON & SONS.

Romford.—Squirrel's Heath, The Manor House Estate, 52 a., f.	
Battersea.—York-rd., "Builder's Arms," p.h., improved rental 48*l.* for 44 yrs.	6,500
Old Kent-road.—Marlborough-rd., f.g.r. 25*l.*, reversion in 47 yrs.	810
Rotherhide.—20, 22, and 28, Rotherhide New-rd., f., y.r. 94*l.* 18s.	700
Peckham.—40, Peckham-rd., u.t. 70 yrs., g.r. 15*l.*, y.r. 85*l.*	820
Southwark.—1a, Moss-alley; also 4 and 5, Ladd's-ct., f., y.r. 57*l.* 4s.	570
Camberwell.—14, Mostyn-ter., u.t. 57¼ yrs., g.r. 6*l.*, q.r. 3*l.*	440

October 13.—By BRADSHAW, BROWN, & Co.

Poplar.—2 and 4, Plimsoll-st., u.t. 42¼ yrs., g.r. 6*l.* 8s., w.r. 70*l.* 8s.	270

By EDWARD WOOD.

Battersea.—157, Falcon-rd. (s.), u.t. 81 yrs., g.r. 22*l.*, e.r. 65*l.*	400
Egham, Surrey.—Station-rd., freehold residence, y.r. 50*l.*	430
Twickenham.—Strafford-rd., "Helmsdale," u.t. 67½ yrs., g.r. 7*l.*, y.r. 40*l.*	660
Stamford Hill.—37, Dunsmure-rd., u.t. 78 yrs., g.r. 8*l.* 8s., y.r. 55*l.*	310
	480

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; g.r. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PUBLISHER'S NOTICES.

...st. Tel., 6113, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVIII. (January to June, 1905) was given as a supplement with the number of July 8th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 2d. each.

THE EIGHTY-EIGHTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, now ready.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 1s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under	4s. 6d.
Each additional line	1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

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Four lines (about thirty words) or under	2s. 6d.
Each additional line (about ten words)	0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { FIFTEENPENCE EACH. By post (carefully packed) 1s.

MEETINGS.

FRIDAY, OCTOBER 20.

Royal Sanitary Institute.—Mr. W. C. Tyndale on "Calculations, Measurements, and Plans and Sections," 7 p.m.

The Architectural Association.—Mr. Andrew Oliver on "London City Churches," illustrated with lantern views. 7.30 p.m.

Institute of Mechanical Engineers.—8 p.m.

Glasgow Technical College Craftsmen's Society.—The second meeting of the session will be held in Room No. 302, College-buildings, Montrose-street, when Mr. T. L. Watson will deliver an address entitled "Notes on Italian Art," illustrated with limelight views. 8 p.m.

MONDAY, OCTOBER 23.

Liverpool Architectural Society.—"Opinions on The Garden City," by various members. 6 p.m.

Royal Sanitary Institute.—Mr. A. Saxon Snell on "Building Materials." 7 p.m.

WEDNESDAY, OCTOBER 25.

Architectural Association Discussion Section (18, *Tufton-street, S.W.*).—Opening meeting of the session. Messrs. H. F. Waring and C. Wainwright on "Casements, Leaded Lights, and Stained Glass." 7.30 p.m.

Royal Sanitary Institute.—Mr. A. Saxon Snell on "Sanitary Building Construction and Planning, Soil and Local Physical Conditions." 7 p.m.

FRIDAY, OCTOBER 27.

Junior Institution of Engineers (Westminster Palace Hotel).—Annual General Meeting and first meeting of the Incorporated Institution. 8 p.m.

Royal Sanitary Institute.—Mr. A. Saxon Snell on "Sanitary Building Construction (Advanced)." 7 p.m.

The Auctioneers' Institute of the United Kingdom (Incorporated).—The opening meeting of the Session, to be held at 5, Whitehall-court, London, S.W., at 7.45 p.m., when the inaugural address will be delivered by the President, Mr. James Boyton.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Hard Stocks	1	8	0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1	4	0	,, ,, ,,
Facing Stocks	2	0	0	,, ,, ,,
Shippers	2	0	0	,, ,, ,,
Flettons	1	7	0	,, at railway depôt.
Red Wire Cuts	1	11	0	,, ,, ,,
Best Fareham Red	3	12	0	,, ,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	4	1	0	,, ,, ,,
Do. Bullnose	4	6	6	,, ,, ,,
Best Stourbridge Fire Bricks	3	15	6	,, ,, ,,
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	12	0	0	,, ,, ,,
Headers	11	0	0	,, ,, ,,
Quoins, Bullnose, and Flats	16	0	0	,, ,, ,,
Double Stretchers	19	0	0	,, ,, ,,
Double Headers	16	0	0	,, ,, ,,
One Side and two Ends	19	0	0	,, ,, ,,
Two Sides and one End	20	0	0	,, ,, ,,
Splays, Chamferred, Squints	20	0	0	,, ,, ,,
Best Dipped Salt Glazed Stretchers, and Header	12	0	0	,, ,, ,,
Quoins, Bullnose, and Flats	14	0	0	,, ,, ,,
Double Stretchers	15	0	0	,, ,, ,,
Double Headers	14	0	0	,, ,, ,,
One Side and two Ends	15	0	0	,, ,, ,,
Two Sides and one End	15	0	0	,, ,, ,,
Splays, Chamferred, Squints	14	0	0	,, ,, ,,
Second Quality White and Dipped Salt Glazed	2	0	0	,, less than best.

	s.	d.	
Thames and Pit Sand	6	9	per yard, delivered.
Thames Ballast	5	3	,, ,,
Best Portland Cement	26	0	per ton, ,,
Best Ground Blue Lias Lime	19	0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,, ,,
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,, ,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,, ,,
Ancaster in blocks	1	10	per ft. cube, deld. rly. depôt.
Beer ,,	1	6	,, ,,
Greenshill ,,	1	10	,, ,,
Darley Dale in blocks	2	4	,, ,,
Red Corsehill ,,	2	2	,, ,,
Closeburn Red Freestone	2	0	,, ,,
Red Mansfield ,,	2	4	,, ,,
YORK STONE—*Robin Hood Quality.*			
Scappled random blocks	2	10	,, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super., ,,
6 in. rubbed two sides ditto, ditto	2	6	,, ,,
3 in. sawn two sides slabs (random sizes)	0	11½	,, ,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	,, ,,
1½ in. to 2 in. ditto, ditto	0	6	,, ,,
HARD YORK—			
Scappled random blocks	3	0	per ft. cube, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super., ,,
6 in. rubbed two sides ditto	3	0	,, ,,
3 in. sawn two sides slabs (random sizes)	1	2	,, ,,
2 in. self-faced random flags	0	5	,, ,,

STONE (*continued*).

HARD YORK (*continued*)—	s.	d.	
Hopton Wood (Hard Bed) in blocks	2	0	per ft. cube, deld. rly. depôt.
,, ,, ,, 6 in. sawn both sides landings	2	7	per ft. super. deld. rly. depôt.
,, ,, ,, 3 in. sawn both sides random slabs	1	0	,, ,,
,, ,, ,, 2 in. do.	0	8½	,, ,,

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r. d.
20×12 ,, ,,	13	17	6	,, ,,
20×10 first quality ,,	13	0	0	,, ,,
20×12 ,, ,,	13	15	0	,, ,,
16×8 ,, ,,	7	5	0	,, ,,
20×10 best blue Portmadoc	12	12	6	,, ,,
16×8 ,, ,,	6	12	6	,, ,,
20×10 best Eureka unfading green	15	17	6	,, ,,
20×12 ,, ,,	18	7	6	,, ,,
18×10 ,, ,,	13	5	0	,, ,,
16×8 ,, ,,	10	5	0	,, ,,
20×10 permanent green	11	12	6	,, ,,
18×10 ,, ,,	9	12	6	,, ,,
16×8 ,, ,,	6	12	6	,, ,,

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000 at rly. depôt.
Hip and Valley tiles	3	7	per doz. ,,
Best Broseley tiles	50	0	per 1000 ,,
Do. Ornamental tiles	52	6	,, ,,
Hip and Valley tiles	4	0	per doz. ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,,
Do. Ornamental do.	60	0	,, ,,
Hip tiles	4	0	per doz. ,,
Valley tiles	3	0	,, ,,
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 ,,
Do. Ornamental do.	54	6	,, ,,
Hip tiles	4	1	per doz. ,,
Valley tiles	3	8	,, ,,
Best "Rosemary" brand plain tiles	48	0	per 1000 ,,
Best Ornamental tiles	50	0	,, ,,
Hip tiles	4	0	per doz. ,,
Valley tiles	3	8	,, ,,
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,,
Do. pressed	47	6	,, ,,
Do. Ornamental do.	50	0	,, ,,
Hip tiles	4	0	per doz. ,,
Valley tiles	3	6	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	,,	,,	
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	,,		
	At per load of 50 ft.					
Fir timber: best middling Danzig or Memel (average specification)	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	3	5	0	3	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens, 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
,, ,, 3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3in. by 11in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
,, ,, 3 in. by 9 in.	13	10	0	14	10	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
,, ,, 3 in. by 9 in.	12	10	0	13	10	0
,, ,, battens	10	0	0	11	0	0
Pitch-pine: deals	16	10	0	20	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow Pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	,,		
Seconds, regular sizes	33	0	0	,,		
Yellow Pine oddments	28	0	0	,,		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak Logs—						
Large, per ft. cube	0	3	6	0	3	6
Small ,, ,,	0	2	6	0	2	9
Wainscot Oak Logs, per ft. cube	0	5	0	0	5	6
Dry Wainscot Oak, per ft. sup. as inch	0	0	8	0	0	9
¾ in. do. do.	0	0	7	—		

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £	s.	d.	£	s.	d.
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak, per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	6
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. ,, ,,	0	14	0	0	18	0
¾ in. by 7 in. white ,, ,,	0	10	0	0	11	6
1 in. by 7 in. ,, ,, ,,	0	12	9	0	15	9

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	6	5	0	7	0	0
Compound Girders, ordinary sections	7	15	0	8	15	0
Steel Compound Stanchions	9	7	6	10	17	6
Angles, Tees, and Channels, ordinary sections	7	15	0	8	15	0
Flitch Plates	8	0	0	8	10	0
Cast Iron Columns and Stanchions including ordinary patterns	6	17	6	8	0	0

METALS.

	Per ton, in London. £	s.	d.	£	s.	d.
IRON—						
Common Bars	8	0	0	8	10	0
Staffordshire Crown Bars, good merchant quality	8	10	0	9	0	0
Staffordshire "Marked Bars"	10	0	0	—		
Mild Steel Bars	8	15	0	9	0	0
Hoop Iron, basis price	9	5	0	9	10	0
,, ,, Galvanised	17	0	0	—		
(*And upwards, according to size and gauge.)						
Sheet Iron Black—						
Ordinary sizes to 20 g.	9	10	0	—		
,, ,, 24 g.	10	10	0	—		
,, ,, 26 g.	12	0	0	—		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	14	0	0	—		
Ordinary sizes to 22 g. and 24 g.	14	10	0	—		
,, ,, 26 g.	15	0	0	—		
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	17	0	0	—		
,, ,, 22 g. and 24 g.	17	10	0	—		
,, ,, 26 g.	19	0	0	—		
Galvanised Corrugated Sheets—						
Ordinary sizes 6 ft. to 8 ft. 20 g.	13	10	0	—		
,, ,, 22 g. and 24 g.	14	0	0	—		
,, ,, 26 g.	15	5	0	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11	10	0	—		
Best Soft Steel Sheets, 22 g. & 24 g.	12	10	0	—		
,, ,, 26 g.	14	15	0	—		
Cut Nails, 3 in. to 6 in.	9	10	0	9	15	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £	s.	d.	£	s.	d.
LEAD—Sheet, English, 3lb. and up.	17	10	0	—		
Pipe in coils	18	0	0	—		
Soil pipe	20	10	0	—		
Compo pipe	20	10	0	—		
ZINC—Sheet—						
Vieille Montagne ton	31	15	0	—		
Silesian	31	10	0	—		
COPPER—						
Strong Sheet per lb.	0	0	11	—		
Thin ,, ,,	0	1	0	—		
Copper nails ,,	0	0	11	—		
BRASS—						
Strong Sheet ,,	0	0	10	—		
Thin ,, ,,	0	0	11	—		
TIN—English Ingots ,,	0	1	5½	—		
SOLDER—Plumbers' ,,	0	0	7	—		
Tinmen's ,,	0	0	8½	—		
Blowpipe ,,	0	0	9½	—		

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d.	per ft.	delivered.
,, fourths	3d.	,,	,,
21 oz. thirds	3¾d.	,,	,,
,, fourths	3¾d.	,,	,,
26 oz. thirds	4¾d.	,,	,,
,, fourths	5¾d.	,,	,,
32 oz. thirds	5¾d.	,,	,,
,, fourths	5¾d.	,,	,,
Fluted Sheet, 15 oz.	3¾d.	,,	,,
,, 21 oz.	4¾d.	,,	,,
¼ Hartley's Rolled Plate	2¾d.	,,	,,
⅜ ,, ,, ,,	2¾d.	,,	,,
½ ,, ,, ,,	2¾d.	,,	,,

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	1	6
,, ,, ,, in barrels	,,	0	1	7
,, ,, ,, in drums	,,	0	1	9
Boiled ,, ,, in pipes	,,	0	1	8
,, ,, ,, in barrels	,,	0	1	9
,, ,, ,, in drums	,,	0	1	11
Turpentine in barrels	,,	0	4	2
,, in drums	,,	0	4	4
Genuine Ground English White Lead	per ton	19	15	0
Red Lead, Dry	,,	19	5	0
Best Linseed Oil Putty	per cwt.	0	6	6
Stockholm Tar	per barrel	1	12	0

PRICES CURRENT.—*Continued on page 431.*

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENT.

(For some Contracts, etc., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be delivered
*CENTRAL PUB. LIBRARY BUILD., MARE-ST.	Hackney Borough Council	50, 30, and 20 guineas	Jan. 15

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Repairs, etc., Dukestown and Trevil Schools.....	Monmouthshire Education Com. ..	C. Dauncey, County Council Offices, Newport, Mon.	Oct. 23
Team Labour, Stone Carting, and Road Watering ..	Maidstone R.D.C.....	M. C. Warne, Surveyor, Barming, Maidstone	do.
Sewerage and Surface Water Drainage	Guildford Town Council	Borough Engineer, Tuns Gate, Guildford	do.
Collecting Tank at Rodney Stoke & 200 yds. Piping	Street U.D.C.....	A. P. I. Cotterell, M.Inst.C.E., 28, Baldwin-street, Bristol	Oct. 24
Repair of Batteries at Grove Park Workhouse, Lee..	Greenwich Guardians	The Master	do.
470 sq. yds. Cement Concrete Footpath, Garvaghy-rd.	Portadown U.D.C.	W. Wilson, Town Clerk, Town Hall, Portadown	do.
Bearing Plates, Files, Wood Screws, Bolts, etc.	Bombay, etc., Railway Co.....	T. W. Wood, Sec., Gloucester House, Bishopsgate-st. Without, E.C.	do.
Beater Picks, Shovels, etc.	do.	do.	do.
Ballasting, Paving, Flagging, etc., Newton Heath ..	Lancashire & Yorkshire Railway Co.	Engineer's Office, Hunt's Bank, Manchester.....	do.
Bathroom, Lavatory, etc., at Receiving Ward	Holsworthy Guardians.....	The Boadroom	do.
Cement Floor in Dining Hall of Workhouse	do	do	do.
800 Chairs.....	Bradford Corporation	F. Stevens, Town Clerk, Bradford	do.
Guernsey Granite Spalls	Brentford Guardians.....	W. Stephens, Clerk, Union Office, Isleworth	do.
150 Tons of Steel Bridge Girders	Great Western Railway Co.....	Engineer, Paddington Station, London	do.
Roadworks in Lane.....	Tynemouth Corporation	J. J. Smillie, Borough Surveyor, Tynemouth	do.
*ALTERA. & ADDIT. to SCHO., WARLINGHAM	Surrey Education Committee	Jarvis & Richards, Architects, 36, Victoria-street, S.W.....	do.
*MAKING-UP ROAD AND BACK ALLEYS	Ealing Town Council	Council's Engineer, Town Hall, Ealing, W.	do.
*RESLATING RFS., REPRS. TO BK. & ST. WORK	Holborn Guardians	Clerk to Guardians, Clerkenwell, E.C.....	Oct. 25
Reconstructing Portion of Huime-st. Tunnel	Manchester Corporation	City Surveyor's Office, Town Hall, Manchester	do.
Shop Premises at Pentre, Rhondda	.....	E. Jones, Architect and Surveyor, Porth	do.
Cast-Iron Pipes	Bacup Corporation	G. Liggle & Son, Engineers, 14, Victoria-street, Westminster, S.W.	do.
Paints, Red and White Lead, Canvas, etc.....	East Indian Railway Company	Office of Company, Nicholas-lane, London, E.C.	do.
Extension of Co-operative Store, Crook	.....	F. H. Livesay, Architect & Surveyor, 107, Newgate-st. Bishop Auck.	do.
Stables, Loose Boxes, etc., for 19 Horses.....	.....	do.	do.
Making-up Part of Clarence-road	Erdington U.D.C.	H. H. Humphries, Engineer, Public Hall, Erdington, Birmingham	do.
Broken Stone	do.	do.	do.
Laundry Machinery, Stepping Hill Infirmary	Stockport Guardians	W. H. Ward, Architect, Paradise-street, Birmingham.....	do.
Heat., Engineer., Fittings at Baths, etc., Springbank	Glasgow Corporation	Office of Public Works, 64, Cochrane-street, Glasgow	do.
Escape Staircase, New Bridge-street Workhouse	Manchester Guardians	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	do.
Pavilion at Saughton Public Park	Edinburgh Corporation	R. Morham, Public Works Office, City-chambers, Edinburgh	do.
Test of Newboring	Selby U.D.C.	P. Griffith, Engineer, 54, Parliament-Street, Westminster, S.W...	do.
Machine-Made Rivets	Manchester Cleansing Committee ..	R. Williamson, Town Hall, Manchester	do.
400 cubic yds. of Granite	Barking Town U.D.C.	C. F. Dawson, Surveyor, Public Offices, Barking.....	do.
Alterations, etc., of Mardy Boys' and Girls' Schools..	Rhondda U.D.C.	J. Rees, Architect, Hillside Cottage, Pentre	Oct. 26
Cast-Iron Pipes, Special Castings, etc.....	Birmingham Water Committee	E. A. Lees, Secretary, 44, Broad-street, Birmingham	do.
Stoneware Pipe Sewers at Ferndale.....	Rhondda U.D.C.	W. J. Jones, Engineer, Public Offices, Pentre, Rhondda.....	do.
Villa at Newtonmore, N.B.	.....	A. Mackenzie, C.E., Architect, Kingussie	do.
Carnegie Free Library, Wynnefield-road, Rathmines..	Rathmines U.D.C.	S. H. Bolton, Surveyor, 19, Upper Merrion-street, Dublin.....	do.
Roberts' Hercules Wind Engine, Sewage Pump, Wkhse.	Stow Guardians.....	R. E. Wilkes, Clerk, Guardians' Offices, Stowmarket	do.
Additions Campbell Gas Engine Co.'s Works, Halifax	.....	Jackson & Fox, Architects, 7, Rawson-street, Halifax	Oct. 27
Furnish. Administrative, etc., Blocks, Bangour Village	Edinburgh District Lunacy Board..	A. Ferrier, Clerk to Lunacy Board, Castle-terrace, Edinburgh	do.
Road Material	Woking U.D.C.	G. J. Wooldridge, Surveyor, Bank-chambers, Woking	do.
Private Street Works, Manor-road, etc.	Tunbridge Wells Corporation	W. H. Maxwell, Eng. and Surveyor, Town Hall, Tunbridge Wells	do.
1,000 tons of Granite Spalls	Brighton Corporation	Borough Engineer, Town Hall, Brighton	do.
Tip Sludge Cart	Oxendon R.D.C.	W. J. Smith, Surveyor, Rothwell House, Market Harborough	do.
Sludge Pump and Suction Pipe.....	do.	do.	do.
Hospital, Farm Workers' Cottages, etc., Bangour....	Edinburgh District Lunacy Board..	H. J. Blanc, Architect, 25, Rutland-square, Edinburgh	Oct. 28
Heating by Atmospheric Steam, Bradford Infirmary	.....	F. Holland, Eng. & Arch., 11, Parkinson's-chbrs,, Hustlergate, Brdfd.	do.
25 Chapel Seats for Workhouse Chapel, Gravelly Hill	Aston Guardians	J. North, Clerk, Union Offices, Vauxhall-road, Birmingham	do.
Painting, etc., at Infirmary, Lewisham High-street ..	Lewisham Guardians	Union Offices, 286, High-street, Lewisham, S.E.	Oct. 30
Rebuilding Business Premises, Taff-st., Portypridd ..	.....	T. R. Phillips, Architect, Old Bank-chambers, Pontypridd	do.
Enlargement of Ilketshall-st. Lawrence Schs., Bungay	East Suffolk Education Committee..	A. Pells, F.S.I., Beccles.....	do.
Underground Conveniences, Foley-street	Marylebone Borough Council	J. P. Waddington, Borough Surveyor, Town Hall, Marylebone....	do.
1,000 Tons of Portland Cement	Aberdeen Harbour Commissioners..	R. G. Nicol, Engineer, Harbour Engineer's Office, Aberdeen.....	do.
Steam Motor Tip Waggon.....	Burton-on-Trent Corporation.....	G. T. Lynam, Borough Engineer, Town Hall, Burton-on-Trent....	do.
Wrought-iron Clinker Storage Hopper	do.	do.	do.
Hardware Goods.....	Rotherham Corporation	W. J. Board, Town Clerk, Town Hall, Rotherham	Oct. 31
Improvements to Eastern Pier Head, Falmouth	.....	F. J. Bowles, Falmouth Docks	do.
Stoneware Pipe Sewer in Cann Hall-road	Leyton U.D.C.	W. Dawson, Engineer, Town Hall, Leyton	do.
Roadworks, part of Brockley-grove, Ladywell	Lewisham Borough Council	Surveyor's Department, Town Hall, Catford	do.
Roadworks, Ennersdale-road, etc., Lewisham	do.	do.	do.
*SUPPLY OF MATERIALS, ETC.	Bromley Borough Council	Municipal Offices, Bromley, Kent	do.
*EREC. INFIRM., ETC., CLATTERBDGE. WKHSE.	Wirral Guardians	J. H. Davies & Sons, Architects, Chester	do.
900 yds. of 6-in. Cast-Iron Water Pipes	Hornsea U.D.C.....	W. E. Warburton, Surveyor, Public Rooms, Hornsea.....	Nov. 1
*WAREHOUSE, NEW BRIDGE-ST., NEWCASTLE	North-Eastern Railway	Company's Architect, Central Station, Newcastle-on-Tyne	do.
Rectory House at Bridgend	Rev. E. S. Roberts	Cook & Edwards, Architects, Masonic-buildings, Bridgend, Glam.	do.
Infants' School, Goole	West Riding Education Committee	J. Vickers Edwards, County Architect, County Hall, Wakefield ..	do.
Laying-out Bowling-green, Heaton Park	Prestwich U.D.C.	L. A. Orford, Clerk, Council Offices, Prestwich	do.
Detached Villa near Larne.....	.....	T. Houston, Architect, Kingscourt, Wellington-place, Belfast	do.
Office Block, Mess-rm., etc., New Bridge-st., Newcastle	North-Eastern Railway Co.....	W. Bell, Architect, Central Station, Newcastle-on-Tyne.....	do.
Rewiring Part of Workhouse and Cottage Homes....	Stoke-upon-Trent Guardians	C. Daniel, Clerk, Union Office, Stoke-upon-Trent.....	do.
Replating Battery	do.	do.	do.
Lifeboat Station, Scrabster, Carthness	Royal National Lifeboat Institute..	B. S. Macdonald, Hon. Sec., Thurso, N.B.	do.
*REPAIRS, ETC., IRON ROOFS, DARTFORD	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	do.
*GASMNS., ETC., CHILD. HMS., CHIPPING ONGAR	Hackney Guardians	Clerk to the Guards., Guards.' Offices, Sidney-rd., Homerton, N.E.	do.
*LAUN. ETC., PLANT, CHILD. HMS. do.	do.	do.	do.
Furn., Fixtures, Fittings, etc., Board-rm., at Parkshot	Richmond Guardians	P. Umney, Clerk, Union-chambers, Richmond, Surrey	Nov. 2
*FENCING A NEW ASYLUM, NR. COLCHESTER	Essex County Lun. Asy. Visit. Com.	County Architect, Chelmsford.....	do.
Laundry Appliances, etc., at Union Workhouse.....	Hereford Guardians	R. Moore, Clerk, 8, St. John-street, Hereford	Nov. 3
Heating Parts of Union Workhouse.....	do.	do.	do.
*NEW SCHOOL AT BRADFIELD.....	Essex Education Committee	County Architect, Duke-street, Chelmsford	do.
Public Library, Stand-lane, Radcliffe	Radcliffe U.D.C.....	H. Lord, Architect, 42, Deansgate, Manchester	Nov. 4
Stores	Great Northern Railway Co. (Ireland)	T. Morrison, Secretary, Amien's-street, Terminus, Dublin	do.
Heating the Burnt Tree, Dudley Port, Council Schools	Tipton U.D.C.	A. Long, Architect, 21, New-street, West Bromwich	Nov. 6
Builder's Work in Connexion With Heating Schools..	do.	do.	do.
Scavenging	Ewell Parish Council.....	G. Hards, Clerk, High-street, Ewell, Surrey	do.
Desks and Chairs for Council Room, Castle-terrace ..	Edinburgh Parish Council.....	B. M. Cameron, Architect, 53, Great King-street, Edinburgh	Nov. 7
Inter-communication Tel. Systm., Castle-terrace Offices	do.	do.	do.
20 New Carriages.....	Cheshire Lines Committee	J. G. Robinson, Great Central Railway Works, Gorton	do.
Sewers, Entwistle-road to Milnrow-road	Rochdale Corporation	S. S. Platt, Borough Surveyor, Town Hall, Rochdale	Nov. 8
*WIDENING ROADS, ETC.	South Mims R.D.C.	Council's Surveyor, 40, High-street, Barnet	do.
Stone & Concrete Bdge. between Flixton & Carrington	County Pala. of Lancaster & Chester	W. C. Hall, County Bridgemaster, Preston	do.
Hurst Mill Bridge, Leigh	do.	do.	do.
*NEW POST OFFICE, SUTTON	Commissioners of H.M. Works, etc.	H.M. Office of Works, etc., Storey's Gate, S.W.	Nov. 9

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Administrative Block for an Isolation Hospital	Chesterton R.D.C.	F. T. Mullett, Architect, Downing-street, Cambridge	Nov. 11
3,000 yds. of 4-in. Cast-Iron Pipes	Bury and District Joint Water Board	J. Cartwright, Engineer, Peel-chambers, Market-place, Bury, Lancs.	Nov. 15
Heating Apparatus, Road End Schools	Oldbury U.D.C. Education Comm.	A. Long, Architect, 21, New-street, West Bromwich	Nov. 13
3,400 yds., of Stoneware Pipe Sewers, etc., Beckford	Winchcombe R.D.C.	Willcox & Raikes, Engineers, 63, Temple-row, Birmingham	Nov. 21
*EREC. OF SCHOOLS, DERBY-RD., GLOUCESTER	Gloucester Education Council	J. F. Trew, Architect, Station-road, Gloucester	do.
Store, Horton-lane and Central-avenue, Bradford	Co-operative Society, Ltd.	W. Ryecroft, Architect, Bank Buildings, Manchester-road, Bradford	No date.
*EXTENSIONS TO ADBASTON COUNCIL SCHOOL	Staffordshire C.C.	Graham Balfour, Education Offices, Stafford	do.
*SIX VILLA RESIDENCES AT HOUNSLOW		E. Pennington, Architect, Richmond	do.

PUBLIC APPOINTMENT.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*ASSIS. ORGANI. TEACHER OF MANUAL TRAIN.	London C.C.	200*l.* per annum	Nov. 4

Those marked with an asterisk (*) are advertised in this number. *Competition*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvi.

PRICES CURRENT—*Continued from page 429.*

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TERMS OF SUBSCRIPTION.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BIRMINGHAM.—For bacteria beds, for Birmingham Tame and Rea District Drainage Board. Mr. J. D. Watson, Engineer to the Board, Tyburn, near Birmingham:—

	Constructional Work.	Medium.
W. Underwood & Bros.	£14,732 1 10	£7,591 17 9
W. Heaps	12,989 0 0	—
J. Riley	12,510 5 2	6,546 4 2
B. Whitehouse & Sons	12,841 0 0	5,900 0 0
W. Moss & Sons	12,852 9 8	5,459 16 6
Whyte & Co.	12,474 17 5	—
Lock, Andrews, & Price	12,360 10 3	7,432 9 9
J. Hodson & Son, Ltd.	12,100 5 6	6,179 7 6
G. Mackay & Son	11,923 0 0	7,606 0 0
W. Cunliffe	11,411 11 6	‡4,676 4 4
W. Cunliffe	—	§6,905 19 11

‡ Slag, § Granite.

BUCKFASTLEIGH.—For building a bakehouse, flour store, etc., in Chapel-street, for the Co-operative Society, Ltd. Mr. A. Warren, architect, Fore-street, Buckfastleigh:—

Reeves & Selwood	£864 11 9	H. Badcock	£722 0 0
G. Churchward	810 0 0	J. Weeks	703 0 0
Hosking Bros.	780 10 0	Furneaux & Son, Buckfastleigh*	703 0 0
Arscott & Son	757 0 0	J. H. Pomeroy	666 9 0
Jackson & Son	740 10 0		

CONSETT (Durham).—For sewage disposal works at Crookhall, for the Urban District Council. Mr. W. S. Shell, Engineer and Surveyor, Parliament-street, Consett:—

Fowells & Sons	£1,780 4 6	MacLaren & Son	£1,225 8 8
J. Westgarth	1,488 13 3	J. Moyle	1,204 16 1
E. Taylor	1,432 7 0	J. Atkinson	1,176 14 1
Ayton & Sons	1,388 9 0	J. G. Bradley, Consett and Durham*	1,068 19 0
J. Allison	1,287 0 0		
J. T. Short	1,250 18 1		

[Surveyor's Estimate £1,075 7 1]

COOKHAM.—For demolition of existing house and bakehouse, erection of new house, shop, and bakehouse, for Miss Brigginshaw. Mr. E. Taylor, architect and surveyor, 1, Broadway, Southall, and at Hammersmith:—

J. Frewing & Son	£982	W. H. Pecover‡	£820
J. K. Cooper & Son	940		

‡ Accepted subject to few slight alterations.

COULSDON (Surrey).—For the erection of a detached residence in Riddlesdown-road, Coulsdon, Surrey, for Mr. H. D. Clark. Messrs. Pepler & Allen, architects, 3, George-street, Croydon:—

Baldwin & Co.	£819 12	Worsfold & Sons	£769 0
Grace & Marsh	819 0	W. Potter*	769 0

CROXDALE (Durham).—For 225 lineal yds. of 12-in. and 9-in. pipe sewer, for the Durham Rural District Council. Mr. G. Gregson, Surveyor, 38, Saddler-street, Durham:—

J. G. Bradley	£155 0 0	J. Carrick, The Peth, Durham*	£145 0 0
R. Oliver	149 3 9		

DORKING.—For Pixham-lane drainage works, for the Urban District Council. Mr. G. R. Strachan, engineer, 9, Victoria-street, S.W.:—

G. Cummins & Sons, Ltd.	£1,772 15 7
Construction and Trading Co.	1,409 8 2
A. G. Osenton	1,387 17 0
Marriott & Salter	1,375 18 4
F. W. Trimm	1,369 0 0
A. Streeter & Co.	1,335 14 4
J. Jackson	1,282 11 6
Stone, Farley, & Co.	1,281 4 11
Muirhead, Greig, & Matthews	1,205 2 9
Hewett & Sons	1,180 13 1
J. W. Dean, Ltd.†	1,153 9 1
A. E. Rigby§	1,117 16 2
J. H. Macdonald‖	1,113 4 0
Davies, Ball, & Co., First Garden City, Letchworth*¶	1,103 18 5

Amended on pricing out to:—† £1,154 19s. 1d.; § £1,127 19s. 2d.; ‖ £1,113 11s. 3d.; ¶ £1,110 8s. 6d.

GUILDFORD.—For certain repairs to the roof of Town Mills, for the Town Council. Mr. C. G. Mason, Borough Engineer:—

R. Smith	£279
Tribe & Robinson, Church-road, Guildford*	249

HOMERTON.—For engineering and building work at Eastern Hospital: Laundry reconstruction and new boiler-house, etc., for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief, Embankment, E.C.:—

Engineering Work.

J. Fraser & Son, Ltd.	£4,984 0 0
G. H. Robinson	3,150 0 0
Wenham & Waters, Ltd.	2,925 0 0
E. Danks & Co. (Oldbury), Ltd.	2,907 10 0
Death & Ellwood	2,900 0 0
Glover & Hobson, Ltd.	2,900 0 0
J. Musgrave & Sons, Ltd.	2,830 0 0
H. Braithwaite & Co., Ltd.	2,750 0 0
Clayton, Son, & Co., Ltd.	2,722 0 0
T. Beeley & Son, Ltd.	2,680 0 0
W. Summerscales & Sons, Ltd.	2,640 0 0
J. Richmond & Co., Ltd.	2,614 0 0
Hewitt & Kellett	2,525 0 0
Hill & Herbert, Ltd.	2,440 0 0
T. Potter & Sons, Ltd.	2,418 0 0
J. & F. May, 33 and 35, Whetstone-park, Lincoln's Inn-fields, W.C.*	2,372 0 0

Building Work.

G. Wales & Co., Ltd.	£1,829 14 0
Gardner & Hazell	1,759 0 0
W. Neil & Co.	1,734 7 0
T. Cole	1,679 11 0
Marchant & Hirst	1,629 17 0
T. Gates & Sons	1,585 9 0
Pollard & Brand	1,525 0 0
C. Yates & Co.	1,466 0 0
A. E. Simes	1,400 0 0
Press, Robinson, & Co.	1,301 6 4
W. H. Hyde	1,221 0 0
E. Streather	1,200 0 0
E. Davey, Pentlands, Boston-avenue, Southend-on-Sea*	1,147 2 8

LONDON.—For decorative repairs at No. 206, Earl's Court-road, S.W. Messrs. J. W. Morley & Co., surveyors, 176, Earl's Court-road, S.W.:—

H. Smith & Son	£131 0
J. Whitaker & Sons*	128 10

LONDON.—For decorative and sanitary repairs at Stonehills (late Oakfield), College-road, Sydenham Hill. Messrs. J. W. Morley & Co., surveyor, 176, Earl's Court-road, S.W.:—

Bowyer & Co.	£967	C. J. Clothier	£730
R. E. Davis	744	H. Smith & Son*	723

LONDON.—For providing and fixing wire-guards for radiators and pipes in twenty patients' blocks at Gore Farm (Upper) Fever Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

Moriarty & Co.	£3,035 0	F. Bird & Co.	£1,996 0
Nettlefold & Sons, Ltd.	3,028 10	E. Ungley	1,940 0
H. Greene & Co.	2,770 10	F. Braby & Co., Ltd., Ida Works, Deptford, S.E.*	1,887 0
F. Ritchie & Sons, Ltd.	2,761 10		
T. Potter & Sons, Ltd.	2,689 0		

LONDON.—For artificial stone paving, Highclere-street, Sydenham, and Stainton-road, Lewisham, for the Lewisham Borough Council:—

	Stainton-road.	Highclere-street.
Atlas Stone Co., Ltd., Cambridge	£480	£260
Kerbing, Metalling, and Channelling.		
Fry Bros, Greenwich	£2,193	—
W. Pearce, Forest Hill	—	£906

LONDON.—For hot-water heating apparatus for heating the appliance-room at the Kensington Fire Station, for the London County Council:—

Stevens Bros.	£138 0 0
Clark, Hunt, & Co., Ltd.	123 5 0
E. Deane	109 18 6
G. & E. Bradley	107 10 0
Comyn, Ching, & Co., Ltd.	107 0 0
J. & F. May, 33 and 35, Whetstone-park, Lincoln's-inn-fields, W.C.*	105 15 0

LONDON.—For compounding the main beam engines at the Deptford Pumping Station, for the London County Council:—

Fullerton, Hodgart, & Barclay, Ltd.	£25,682
Clayton, Goodfellow, & Co, Ltd.	23,850
John Musgrave & Sons, Ltd.	22,792
Yates & Thom, Ltd.	22,254
Engineering Co., Ltd.	22,170
Thames Ironworks, Shipbuilding, & James Simpson & Co., Ltd.	21,300
Galloways, Ltd.	20,620
Richardsons, Westgarth, & Co., Ltd.	20,500
Hathorn, Davey, & Co., Ltd., Leeds*	18,140

LONDON.—For the supply and delivery of proto-sulphate of iron for the treatment of sewage at the Barking and Crossness outfall works, for the London County Council. The total quantity required amounts to 5,550 tons, viz., 3,300 tons for Barking and 2,250 tons for Crossness:—

	Delivered alongside jetty. At Barking. Per ton.	At Crossness. Per ton.
	s. d.	s. d.
L. Somerfeld	19 7	19 1
H. Wallace & Co., Ltd.	19 6	19 0
W. H. Edwards	19 3	18 9
J. Griffiths	—	18 6
Higginbottom & Co.	—	17 9
Swansea Copperas Co.	16 6‡	16 6‡
D. Matthews, Morrison, R.S.O., Glamorgan	15 9	*14 10½
J. Bevan & Son	15 6	15 9
T. Herschell Jones & Co., Swansea	*15 5	15 5

[Current contract prices (J. Griffiths) £19 9s. and £19 3s.]

‡ For 1,000 tons only.

LONDON.—For pulling down and rebuilding bank premises, Nos. 56 and 58, Old Kent-road, S.E., for the London and Provincial Bank, Ltd. Mr. V. Vagnolini, architect, 33, Stirling-road, Clapham Rise, S.W.:—

G. J. Kick	£2,546 18	Edwards & Medway	£2,146 0
W. S. Shepherd	2,310 0	Rice & Son	1,992 0
A. Faulds	2,222 0	J. Parsons*	1,887 0

NORTHWICH.—For erecting Council School to accommodate 800 children, for the Education Committee of the County Council of Cheshire. Mr. A. E. Powles, architect, 7, Winnington-street, Northwich. Quantities by Mr. E. I. Muspratt, Chester:—

W. Molyneux	£12,936 0	J. Mayers & Son	£11,530 0
S. Webster	12,777 0	Pickstock & Royle	12,764 12
I. Gerrard & Sons, Ltd.	11,526 0	T. G Huxley	12,700 0
C. W. Davenport	11,387 0	E. W. Bostock	12,535 0
W. Wood, Hartford‡	11,320 0	S. Appleton	12,172 10
Hughes & Stirling	11,258 0	P. Taylor & Sons	11,857 0
J. Hamilton & Son	11,233 0	Bennett Bros. & Co.	11,600 0
		Young, Tinker, & Young	11,507 0

‡ Recommended for acceptance.

NORTHWICH.—For making two new streets off Victoria-road, and a back passage, for the Education Committee of the Cheshire County Council. Mr. A. E. Powles, architect, 7, Winnington-street, Northwich. Quantities by Mr. E. I. Muspratt, Chester:—

J. Mayers & Son	£1,053	0	0	Bennie & Thompson	£783	9	11
S. Hutton	861	15	8	G. Boyton, jun.	765	18	5
Hughes & Stirling	850	0	0	Dale & Appleton, Northwich‡	746	12	0
C. W. Davenport	822	0	0	J. Hamilton & Son	725	0	0
J. W. Harris	799	9	5				

‡ Recommended for acceptance.

NORWICH.—For the extensions of Norwich City Asylum. Mr. A. E. Collins, City Engineer:—

J. S. Smith	£9,547	0	0	Youngs & Son	£8,693	0	0
T. H. Blyth	9,280	16	0	Boddy & Son	8,683	4	8
R. Daws	9,255	15	0	H. C. Greengrass‡	8,667	0	0
Coulson & Lofts	9,249	0	0	W. J. Hannant, Norwich*	8,211	0	0
T. R. Gill	8,977	16	7	Southgate Bros.§	8,026	19	9
A. S. Lincoln	8,899	18	7	Downing & Son‖	7,965	0	0
S. W. Utting	8,797	0	0				
Gunton & Palmer	8,794	1	0				

‡ Informal. § Incomplete. ‖ Withdrawn.

OSSETT (Yorks).—For the conversion of Park House into a secondary school, for the Corporation. Mr. F. W. Ridgway, architect and surveyor, 11, Union-street, Dewsbury:—

Masons: Peace & Oldroyd, Leeds-road, Ossett*	£410 0
Joiners: W. & E. Whitehead, Bank-street, Ossett*	339 10
Plumber: J. H. Allott, Station-road, Ossett*	390 0
Slaters: Sedgwick & Son, Globe-road, Leeds*	57 0
Plasterers: Lockwood Bros., Wakefield*	44 10
Heating Apparatus: T. H. Rayner, 12, Market-street, Huddersfield*	114 0

[Sixty tenders were received for the work. The lowest tender in each case was accepted.]

OXFORD.—For the erection of additional students'-rooms, library, chemical laboratories, and lecture-rooms, Ship-street, for Jesus College, Oxford. Messrs. R. England & Son, architects and surveyors, Oxford:—

Symn & Co.	£15,563	J. Wooldridge	£13,850
Hutchins & Sons	15,200	Benfield & Loxley	13,824
Parnell & Son	14,863	Estcourt & Sons, Gloucester*	13,656
Kingeslee & Sons	14,367		

Heating.

S. T. Haden & Sons, London* £419

PORTSMOUTH.—For pulling down and rebuilding the "Still" public-house:—

Croad	£1,230	Jones	£1,187!
Crockerell	1,208	Corke	1,187!
Salter	1,187!		

[All of Portsmouth.]

ST. ALBANS.—For the erection of six cottages, for the Trustees of St. Peter's Charities. Mr. H. F. Mence, architect, Town Hall-chambers, St. Albans. Quantities by Mr. W. H. Smith, 5, Great Winchester-street, E.C.:—

H. J. Skelton	£2,690	F. W. Stanley	£2,284
C. Miskin & Sons	2,545	J. Foot	1,889
J. Jarvis & Sons	2,396	E. Dunham	1,644
Vail & Williamson	2,379	J. Hammond & Sons, St. Albans*	1,610
Boff Bros.	2,376		

ST. ALBANS.—For the erection of a residence in Hall-place-gardens, for Mrs. Langridge. Mr. H. F. Mence, architect, Town Hall-chambers, St. Albans:—

E. Dunham	£1,565
C. Miskin & Sons, St. Albans*	1,558

SUTTON (Surrey).—For the erection of porter's office at Belmont Asylum, for the Metropolitan Asylums Board. Messrs. T. Dinwiddy & Sons, architects, 54, Parliament-street, S.W.:—

Wright Bros.	£270	0	Marriott & Salter £211 0
H. Freeman	264	0	W. H. Baldwin & Co. 203 10
T. Cole	249	0	J. B. Potter 200 0
T. D. Leng	240	0	Cropley Bros., Ltd., High-street, Epsom* 147 0
T. Pearce	233	0	
R. Jones & Son	216	0	

TUNBRIDGE WELLS.—For additional classrooms at the St. James's National Schools, Tunbridge Wells. Mr. C. H. Strange, architect:—

W. B. Jury & Sons	£716	0 0	Beale & Son £665 0 0
J. N. Jeffery	687	16 0	Jarvis & Son* 664 0 0

[All of Tunbridge Wells.]

WARRINGTON.—For erecting a public elementary school (Beamont Council School), for the Warrington Education Committee. Mr. S. P. Silcock, architect, Egypt-street, Warrington. Quantities by architect:—

C. W. Davenport, Stockton Heath, Warrington* £13,784 10

WAVENDON (Bucks).—For additions to Eagle Lodge, for Sir Henry H. A. Hoare, Bart. Mr. W. B. Stonebridge, architect, Wozam Sands, D.S.O.:—

F. & T. Gregory	£197	0	C. Binfield £149 19
M. Fleet	175	0	J. Bonner 131 10
B. Wilford	165	0	W. Summerford 115 10

[Architect's estimate, £125.]

WESTERHAM (Kent).—For the provision and fixing of an engine, with lift and force pumps (capable of delivering 500,000 gallons of water in twenty-four hours), at the Hill Park Estate, Westerham, for the Metropolitan Water Board:—

Central Marine Engine Works	£6,750	0		Coombe, Barbour, & Co.	£2,579	0	
Wood Bros.	3,950	0		Ashton, Frost, & Co.	2,509	0	
D. Stewart & Co.	3,741	0		Pratchitt Bros.	2,480	0	
Richardson, Westgarth, & Co.	3,595	0		Glenfield & Kennedy	2,367	10	
Mathews & Co.	3,379	0		Robinson, Cooks, & Co.	2,320	0	
Galloways, Ltd.	3,170	0		J. Simpson & Co.	2,240	0	
Haste Pump Co., Ltd.	3,090	0		Fullerton, Hodgart, & Barclay, Ltd.	2,180	0	
Thames Iron Works	2,910	0		F. Pearn & Co.	2,100	0	
Woodhouse & Mitchell	2,789	0		Lilleshall Co.	2,085	0	
Low Moor Co., Ltd.	2,750	0		Watt & Co.	1,848	0	
Excelsior Engineering Works	2,650	0		E. Timmins & Son, Euncorn*	1,466	1	

WORTHING.—For erecting infants' school, Little High-street, for the Education Committee. Messrs. Singer, Hyde, & Son, Worthing. Quantities by Mr. R. R. Wentworth Hyde:—

J. Martin	£5,426	14	3	Peerless, Dennis, & Co.	£4,961	0	0
W. A. Field & Co.	5,283	0	0	J. H. Lelliott	4,960	15	0
W. J. East	5,225	0	0	J. Linfield & Sons	4,917	0	0
W. Brown & Sons	5,219	0	0	R. Cook & Sons	4,884	0	0
Rowland Bros.	5,049	0	0	J. A. East, St. Matthew's-rd., Worthing*	4,555	15	2
J. Langley & Co.	4,989	0	0				

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